This is a digital copy of a book that was preserved for generations on library shelves before it was carefully scanned by Google as part of a project to make the world's books discoverable online.

It has survived long enough for the copyright to expire and the book to enter the public domain. A public domain book is one that was never subject to copyright or whose legal copyright term has expired. Whether a book is in the public domain may vary country to country. Public domain books are our gateways to the past, representing a wealth of history, culture and knowledge that's often difficult to discover.

Marks, notations and other marginalia present in the original volume will appear in this file - a reminder of this book's long journey from the publisher to a library and finally to you.

**Usage guidelines**

Google is proud to partner with libraries to digitize public domain materials and make them widely accessible. Public domain books belong to the public and we are merely their custodians. Nevertheless, this work is expensive, so in order to keep providing this resource, we have taken steps to prevent abuse by commercial parties, including placing technical restrictions on automated querying.

We also ask that you:

+ *Make non-commercial use of the files* We designed Google Book Search for use by individuals, and we request that you use these files for personal, non-commercial purposes.

+ *Refrain from automated querying* Do not send automated queries of any sort to Google's system: If you are conducting research on machine translation, optical character recognition or other areas where access to a large amount of text is helpful, please contact us. We encourage the use of public domain materials for these purposes and may be able to help.

+ *Maintain attribution* The Google "watermark" you see on each file is essential for informing people about this project and helping them find additional materials through Google Book Search. Please do not remove it.

+ *Keep it legal* Whatever your use, remember that you are responsible for ensuring that what you are doing is legal. Do not assume that just because we believe a book is in the public domain for users in the United States, that the work is also in the public domain for users in other countries. Whether a book is still in copyright varies from country to country, and we can't offer guidance on whether any specific use of any specific book is allowed. Please do not assume that a book's appearance in Google Book Search means it can be used in any manner anywhere in the world. Copyright infringement liability can be quite severe.

**About Google Book Search**

Google's mission is to organize the world's information and to make it universally accessible and useful. Google Book Search helps readers discover the world's books while helping authors and publishers reach new audiences. You can search through the full text of this book on the web at `http://books.google.com/`

06907913 9

# MATHEMATICAL TABLES

FOR

# PRACTICAL MEN;

COMPRISING

## SEVERAL NEW AND USEFUL TABLES

ADAPTED TO THE WANTS OF

## SURVEYORS, ENGINEERS, AND NAVIGATORS.

---


By J. A. POWERS, Civil Engineer,

Inventor of the New System of constructing Mathematical Tables; Author of the Mercantile Tables and Chronometrical Circles; of the Carpenter's and Lumber Merchant's Calculator; of the Traverse Tables, and of the Annuity Tables; Inventor of the Triangular Omnimeter; of the Nautical and Trigonometrical Calculator, &c. &c. and Teacher of Mathematics at the American Institute.



ASTOR LIBRARY
NEW YORK



NEW YORK:

PUBLISHED BY CHARLES WELLS,

56 GOLD STREET.

1845.


---


Entered according to Act of Congress, in the year 1845,

By CHARLES WELLS,

In the Clerk's Office of the District Court for the Southern District of New York.

# CONTENTS.


| | Page. |
|---|---|
| Description of the Tables | v |
| TABLE I—Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for angles to even degrees between 1 and 90 | 2 |
| TABLE II—Showing the difference of Latitude and Departure for points and quarter points, and for any whole or fractional distance not exceeding 900 | 6 |
| TABLE III—Logarithms of Numbers from 1 to 10,000, with their Differences | 8 |
| TABLE IV—Natural Sines | 26 |
| TABLE V—Showing by inspection the Areas of all Circles from 1 to 101, advancing by one-tenth | 35 |
| TABLE VI—Showing by inspection the Areas of all Circles from $\frac{1}{8}$ to 101, advancing by one-eighth | 38 |
| TABLE VII—Showing by inspection the Areas of all Circles from 1 to 50, advancing by one-twelfth | 41 |
| TABLE VIII—Showing by inspection the Areas of all Spheres from $\frac{1}{2}$ to 12, advancing by $\frac{1}{8}$ | 43 |
| TABLE IX—Showing by inspection the Solidity of Spheres from $\frac{1}{2}$ to 12, advancing by $\frac{1}{8}$ | 43 |
| TABLE X—Showing by inspection the Areas of Spheres from 1 to 12, advancing by one-tenth | 44 |
| TABLE XI—Showing by inspection the Solidity of Spheres from 1 to 12, advancing by one-tenth | 44 |
| TABLE XII—Areas of Regular Polygons | 45 |
| TABLE XIII—Areas of the Regular Solids | 45 |
| TABLE XIV—Solidities of the Regular Solids | 45 |
| TABLE XV—Areas of the Segments of a Circle | 46 |
| TABLE XVI—Areas of the Zones of a Circle | 47 |
| TABLE XVII—Lengths of Circular Arcs | 48 |
| TABLE XVIII—Lengths of Semi-Elliptic Arcs | 50 |
| TABLE XIX—Square Roots | 52 |
| TABLE XX—Cube Roots | 56 |

# DESCRIPTION OF THE TABLES.

## TRAVERSE TABLES.

The first table shows the difference of latitude and departure corresponding to any distance not exceeding 900, and for angles to even degrees between 1° and 90°. Table second is of the same nature, but for points and quarter points.

The numbers in the right and left hand perpendicular columns express angles: the numbers in the top and bottom horizontal lines, commencing at 100 and increasing to 900, represent distances in rods, miles, leagues, or any proposed denomination, the peculiar arrangement of which is such that the first mentioned number may be supposed to represent 1, 10, 100, &c. according as we use the unit abstractedly or in connection with one or more cyphers. The unit, independent of the cyphers, may also be conceived to express .1, .01, .001, &c. decimally, as occasion may require. These principles are general, and equally applicable to each of the other numbers in the distance lines of both tables.

If the given course is less than 4 points, or 45°, it is to be taken together with the titles of the latitude and departure columns from the left; and conversely, if the course exceed 45°, from the right.

In using these tables, it must be particularly observed, that directly over or under the given distance, and corresponding with the course in its column, stand the latitude and departure in wholes, and to the right the decimal parts.

EXAMPLE I.—Suppose a ship sail N. 23° E. 80 miles: to determine the difference of latitude and departure?

SOLUTION.—Corresponding with 23 in the left hand column of table first, and under 80, stands 73.640 miles for difference of latitude, and 31.258 miles for difference of departure.

EXAMPLE II.—Suppose a ship sail S. 67° W. 20 leagues: to determine the difference of latitude and departure?

SOLUTION.—Corresponding with 67° in the right hand column of table first, and under 20, stands 7.815 leagues for difference of latitude, and 18.410 leagues for difference of departure.

EXAMPLE III.—Suppose a ship sail N. 2¾ points, W. 40 leagues: to determine the difference of latitude and departure?

SOLUTION.—Corresponding with 2¾ points in the left-hand column of table second, and under 40, stands 34.31 leagues for difference of latitude, and 20.56 leagues for difference of departure.

EXAMPLE IV.—A ship sails S. 7¼ points, W. 70 leagues: required the difference of latitude and departure?

SOLUTION.—Corresponding with 7¼ points in the right hand column of table second, and under 70, stands 10.27 leagues for difference of latitude, and 69.24 leagues for difference of departure.

NOTE.—If the given distance cannot be exactly found in the tables, it is to be decimally separated or decomposed, and the latitude and departure corresponding to each part determined separately; the aggregate of the results will express the difference of latitude and departure corresponding to the entire distance.

For example, suppose a ship sail N. 42° W. 272½ miles, and it was required to determine the difference of latitude and departure. This number, when separated, will be 200+70+2+.5; and

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Under 200, corres. with 42° | | | stands | 148.63 | for diff. of lat. | | and 133.83 | diff. of dep. |
| Under 70, | " | " | " | 052.02 | " | " | 046.839 | " |
| Under 2, | " | " | " | 001.4863 | " | " | 001.3383 | " |
| Under 0.5, | " | " | " | 000.37157 | " | " | 000.33457 | " |
| Consequently the diff. of lat. is | | | | 202.50787 miles, | | diff. of dep. | 182.34187 | miles. |

## TABLE III—LOGARITHMS OF NUMBERS.

In the infancy of astronomy, before the invention of accurate instruments, and the discovery of the more refined mathematical theories, the calculations were fewer and shorter than in modern times. As science advanced, however, they became more irksome and tedious, so as to render some method of abridging them highly desirable. Accordingly, a series of artificial numbers, called logarithms, were invented by the illustrious Lord NAPIER, Baron of Merchiston in Scotland, which, from their great utility, have formed an epoch in the history of science. These numbers are so contrived that by them the operations of multiplication and division may be performed by addition and subtraction, and of evolution and involution by division and multiplication. When a series of these numbers between unity and any other given number are calculated and arranged in a tabular form, they constitute what is termed a table of logarithms. In Table 3d are given the logarithms of all numbers from 0 to 9999 to six places in decimals; and, as is generally the case, the indexes of logarithms greater than 100 are omitted; yet in operating they must be prefixed—in doing which it must be recollected that the logarithm of any integral or mixed number is always one less than the number of integral places in the natural number. Thus, the index of the logarithm of any whole or mixed number between 10 and 100 is 1; between 100 and 1000 it is 2; between 1000 and 10,000 it is 3, &c.

### *To find the Logarithm of any Whole Number less than* 100.

RULE.—Look for the given number on the first page of the table, and against it in the column headed Log. will be found the logarithm required, with its index prefixed. Thus, against 54 stands 1.732394, which is its logarithm.

### *To find the Logarithm of any Whole Number between* 100 *and* 1000.

RULE.—Find the given number in the left hand column of the table, and directly under 0 in the next column is the decimal part, to the left of which must be prefixed the index 2, and you have the entire logarithm. Thus, suppose it was required to find the logarithm of 421: this number being found in the left hand column, corresponding to it in the column headed 0 stands .624282, the decimal part; to which prefixing the index 2, we have the entire logarithm of 421=2.624282.

### *To find the Logarithm of any Whole Number between* 1000 *and* 10,000.

RULE.—Find the three left hand figures of the given number in the left hand column of the table, corresponding to which in the column that is designated at the top (or bottom) with the fourth figure will be found the decimal part; to this must be prefixed the index 3, and the entire logarithm is obtained. Thus, to find the logarithm of 7425: Opposite to 742 (the three left hand figures) and under 5 (the fourth figure) stands .870697, the decimal part; to which prefixing the index 3, we obtain 3.870697, the logarithm of 7425.

### *To find the Logarithm of any Number greater than* 10,000.

RULE.—Find the decimal part of the logarithm of the four left hand figures by the foregoing rule; take from the last column, on the right of the page marked Diff. the number on the same horizontal line with the logarithm; multiply this number by the right hand figures of the given number that were before rejected, and cut off from the right hand of the product as many places for decimals as there are figures in the multiplier; this product added to the first logarithm will give the decimal part of the logarithm sought.* For example, let it be required to find the logarithm of 852874: The decimal part of the logarithm of 8528 (the four left hand figures) is .930847; the corresponding number in the column of Diff. is 51, which being multiplied by 74 (the right hand figures of the given number that were before rejected) gives 3774; now pointing off two places for decimals, the number to be added (omitting fractions) is 37, which added to .930847 gives .930884; prefixing to this the index 5, we have 5.930884, the logarithm of 852874.

### *To find the Logarithm of any Mixed Decimal Number.*

RULE.—Find the logarithm of the number, as if it was an integer, by the last rule, to which prefix the index of the integral part of the given number. Thus, to find the logarithm of 85.2874: Find the fractional part of the logarithm of 852874 without

* This method of finding the logarithms of numbers from the table is based upon the supposition that the logarithms are proportional to their corresponding numbers—which, though not rigorously true, is sufficiently accurate for all practical purposes.

regarding the decimal point; this in the last example was found to be .930884; to this prefixing the index 1, corresponding to the whole or integral part 85, we obtain 1.930884, the logarithm of 85.2874.

*To find the Logarithm of a Decimal Fraction less than Unity.*

RULE.—Proceed in obtaining the decimal part of the logarithm as if the fraction was a whole number; observe how many cyphers are contained between the decimal point and the first figure of the given fraction; to this add 1 for the index, which will always be negative.* Thus, the logarithm of .1824 is $\bar{1}$.261025; the logarithm of .0754 is $\bar{2}$.865696; the logarithm of .00000155 is $\bar{6}$.184691, &c.

*To find the Logarithm of a Mixed Number.*

RULE.—Reduce the number to an improper fraction, and subtract the logarithm of the denominator from the logarithm of the numerator; the remainder will be the logarithm required.

EXAMPLE.—Required the logarithm of $4\frac{3}{7}$:—

$4\frac{3}{7} = \frac{31}{7}$; and the logarithm of 31 = 1.491362
logarithm of 7 = 0.845098

Logarithm $4\frac{3}{7}$ = difference, - - - 0.646264

*To find the Logarithm of a Proper Fraction.*

RULE.—From the logarithm of the numerator take the logarithm of the denominator; the remainder will be the logarithm of the fraction.

EXAMPLE.—To find the logarithm of $\frac{7}{11}$:—

Logarithm of 7 - - = 0.845098
Logarithm of 11 - - = 1.041393
Logarithm of $\frac{7}{11}$ - = $\bar{1}$.803705

*To find in the Table the Natural Number corresponding to any given Logarithm.*

RULE.—Seek in the table for the decimal part of the given logarithm; if it be exactly found, set down the corresponding number; then if the index of the given logarithm be positive, point off from the left of the number found one place more for whole numbers than there are units in the index of the given logarithm. If the index of the given logarithm be 0, there will be one place of whole numbers; if it be $\bar{1}$, the number will be entirely decimal; if it be $\bar{2}$, there will be one cypher between the decimal point and the first figure; if it be $\bar{3}$, there will be two, &c. If, however, the decimal part of the given logarithm cannot be exactly found in the table, take the number answering to the next less logarithm; take also from the table the corresponding difference in the right hand column (headed Diff.); then take this less logarithm from the given logarithm; divide the remainder by the difference, (taken from the column Diff.) and annex the quotient to the number answering to the less logarithm; this gives the required number nearly.†

EXAMPLE.—To find the natural number corresponding to the logarithm 1.532708:

The given logarithm - - - - - = 1.532708
Next less tabular logarithm of 34.09 = 1.532627
Difference - - - - - - - - - = 81

Tabular difference = 128, and $\frac{8100}{128}$ = 63, which being annexed to 34.09 gives 34.0963 for the number corresponding to the logarithm 1.532708.

EXAMPLE II.—Required the number answering to the logarithm 3.233568:—

The given logarithm - - - - - = 3.233568
Next less tabular logarithm of 1712 = 3.233504
Difference - - - - - - - - - = 64

Tabular difference taken from the column Diff. = 253, and $\frac{6400}{253}$ = 25, which being annexed to 1712, gives 171225; the index being 3, four places must be pointed off for the integral part of the required number; accordingly, the number corresponding to the logarithm 3.233568 is 1712.25.

* The index of the logarithm of any number less than unity is negative, and is generally distinguished by placing the negative or minus sign directly over it.

† This rule, like the one for finding the logarithm of a number when the places exceed four, is based upon the supposition that the numbers are proportional to their corresponding logarithms.

*To perform Multiplication by Logarithms.*

RULE.—Add the logarithms of the factors together, and their sum will be the logarithm of the product.

EXAMPLE.—Required the product of 754 by 23:—

Logarithm of 754 - - - = 2.865696
Logarithm of 23 - - - = 1.361728

Product = 16882, whose logarithm is $\overline{4}.227424$

NOTE.—If the indexes are different—that is, if one be positive and the other negative—their difference is to be taken, in which case the sign of the greater index must be prefixed to the result.

EXAMPLE.—Multiply 82.33 by .3:—

Logarithm of 82.33 - - = 1.915558
Logarithm of .3 - - - = $\overline{1}$.477121

Product = 24.699, whose log. is 1.392679

In this example there is 1 to carry from the decimal part of the logarithms, which added to 1, the positive index, makes 2; from this subtracting 1, the negative index, the remainder is 1, which is therefore the index of the sum of the logarithms.

EXAMPLE II.—Multiply 27.63, 1.859, .7258, and .3591 together:—

Logarithm of 27.63 - - = 1.441381
Logarithm of 1.859 - - = 0.269279
Logarithm of 0.7258 - = $\overline{1}$.860817
Logarithm of 0.03591 - = $\overline{2}$.555215

Product nearly = 1.339, whose log. is 0.126692

In this example there is 2 to carry from the decimal part of the logarithms, which added to 1, the positive index, makes 3; deducting from this 3, the sum of the negative indexes, we obtain 0, which is therefore the index of the sum of the logarithms.

*To perform Division by Logarithms.*

RULE.—From the logarithm of the dividend take the logarithm of the divisor, and the remainder will be the logarithm of the quotient.

In this operation the sign of the index of the divisor must be changed from positive to negative, or from negative to positive; then the difference between the positive and negative indexes will be the index to the logarithm of the quotient. Also, when 1 has been borrowed in the left-hand place of the decimal part of the logarithm, it must be added to the index of the divisor if positive, but subtracted if negative.

EXAMPLE I.—Divide 15.31 by 46.75:—

Logarithm of 15.31 - = 1.184975
Logarithm of 46.75 - - = 1.669782

Quotient = .3275, whose log. is $\overline{1}$.515193

In this example the 1 which was borrowed in subtracting the left-hand decimal figure, when added to 1, the index of the divisor makes 2; this with its sign changed is $\overline{2}$, from which subtracting 1, the index of the dividend, the remainder is $\overline{1}$.

EXAMPLE II.—To divide .05951 by .007693:—

Logarithm of .05951 - - = $\overline{2}$.774590
Logarithm of .007693 - = $\overline{3}$.886096

Quotient = 7.735, whose log. is 0.888494

Here the 1 which was borrowed in subtracting the decimal part is taken from $\overline{3}$, leaving a remainder of $\overline{2}$, which with its sign changed is 2 or $+\overline{2}$; and this added to $\overline{2}$, the index of the dividend, gives 2—2=0, which is therefore the index of the quotient.

*To perform the Rule of Three by Logarithms.*

RULE.—Add the logarithms of the second and third terms together, and from their sum subtract the logarithm of the first term, and the remainder will be the logarithm of the fourth term, or answer.

EXAMPLE I.—To find a fourth proportional to 98.45, 1.969, and 347.2:—

Logarithm of 347.2, the third term - - = 2.540580
Logarithm of 1.969, second term, - - = 0.294246
Their sum - - - - - - - - = 2.834826
Logarithm of 98.45, the first term - - = 1.993216

Answer = 6.944, whose logarithm = remainder = 0.841610

EXAMPLE II.—If a clock gain 14 seconds in 5 days 18 hours, how much will it gain in 17 days 15 hours?

STATEMENT.—5*d.* 18*h.* : 14*sec.* :: 17*d.* 15*h.* : *sec.* Answer.

Logarithm of 17.625 days, the third term - = 1.246129
Logarithm of 14 seconds, second term - - = 1.146128
Their sum - - - - - - - - - - - - - = $\overline{2}$.392257
Logarithm of 5.75 days, the first term - - = 0.759668
Answer = 42.91 seconds, whose logarithm = remainder = $\overline{1}$.632589

*Involution by Logarithms.*

RULE.—Multiply the logarithm of the given number by the index of the proposed power, and the product will be a logarithm whose corresponding natural number is the power required. When a negative index is thus multiplied, the product will evidently be negative, but what is carried from the decimal part of the logarithm must be positive; accordingly, their difference is the index of the product.

EXAMPLE.—To find the third power or cube of 2.768:—

Logarithm of 2.768 - - = 0.442166
Multiplied by the index - = 3.
Answer = 21.21, whose logarithm = product = $\overline{1}$.326498

EXAMPLE II.—Required the third power of .7916:—

Logarithm of .7916 - - = $\overline{1}$.898506
Index - - - - - - - - = 3.
Answer = .4961, whose logarithm = product = $\overline{1}$.695518

In this example, 3 times the negative index = $\overline{3}$; the difference between which and the 2 derived from multiplying the decimal part is $\overline{1}$, the index of the product.

*Evolution by Logarithms.*

RULE.—Divide the logarithm of the given number by the index of the proposed root; the quotient is a logarithm whose natural number is the root required. When the index of the logarithm of the given number is negative, and does not exactly contain the divisor without a remainder, it must be increased by such a number as will make it exactly divisible by the divisor, and the units borrowed must be added as so many tens to the left-hand place of the decimal: the operation is then the same as in whole numbers.

EXAMPLE I.—Required the square root of 1501:—

Index = 2)3.17638 + logarithm of 1501.
Answer 38.74, whose log. = quotient = 1.58819

EXAMPLE II.—Required the cube root of 847:—

Index = 3)2.927883, the logarithm of 847.
0.975961 = quotient = log. of 9.462, the answer nearly.

EXAMPLE III.—Required the square root of .093:—

Index = 2)$\overline{2}$.968483 = logarithm of .093.
$\overline{1}$.484241 = quotient = logarithm of .304959 = answer.

EXAMPLE IV.—To find the cube root of .00048:—

Index = 3)$\overline{4}$.6812412 = logarithm of the given number.
Root .07829735; $\overline{2}$.8937471 = logarithm of the root.

In this example the divisor 3 not being exactly contained in $\overline{4}$, I increase it by adding 2, and it becomes 6, which contains the divisor just 2 times; and the 2 borrowed being prefixed to the decimal part, makes 2.6812412, which divided by 3 gives .8937471; accordingly, $\overline{2}$.8937471 is the logarithm of the root.

---

## TABLE IV—NATURAL SINES.

This table shows by inspection the natural sines, corresponding to every degree and minute of the quadrant, the arrangement of which is such that the degrees answering to the sines are to be taken from the top of the page, and the minutes from the left-hand column; likewise, the degrees corresponding to the co-sines are to be taken from the bottom, and the minutes from the right-hand column.

It will be recollected that the natural sine or co-sine, &c. of any number of degrees more than 90° is the same as the natural sine or co-sine, &c. of their supplement

found by subtracting them from 180°; in other words, the natural sine or co-sine of an arc greater than 90° is the natural co-sine or sine, &c. of its excess above 90°.

*To find the Natural Sine or Co-sine of any given number of Degrees and Minutes.*

RULE.—Under the given number of degrees at the top of the table, and corresponding with the given number of minutes in the left-hand column, will be found the natural sine required; likewise, over the given number of degrees at the bottom of the table, and against the given number of minutes in the right-hand column, stands the natural co-sine.

EXAMPLE.—To find the natural sine and co-sine of 27° 34′:—

SOLUTION.—Under 27°, at the top of the table, and corresponding with 34′ in the left hand column, stands .462780, the natural sine of 27° 34′. Also, over 27°, and against 34′ in the right-hand column, stands .886473, which is therefore the natural co-sine of 27° 34′.

To find the number of degrees and minutes corresponding to a given natural sine or co-sine, we have only to reverse the foregoing process. Thus, to find the degrees and minutes answering to the given natural sine .867476:—Having found the given natural sine, I find it corresponds with 60° at the top of the table, and 10′ in the left-hand column; accordingly 60° 10′ or its supplement 119° 50′, is the required number of degrees and minutes. Again, to find the degrees and minutes answering to the given natural co-sine .751840:—From inspection, this number is found to correspond with 41° at the bottom of the table, and 15′ in the right-hand column; consequently, 41° 15′ or its supplement 138° 45′ is the answer required.

*To find the Natural Tangent or Co-tangent of any given number of Degrees and Minutes.*

RULE.—Divide the natural sine of the given number of degrees and minutes by the natural co-sine thereof, and the quotient will be the natural tangent. Also, if the natural co-sine be divided by the natural sine, the result will be the natural co-tangent.

EXAMPLE.—To determine the natural tangent and co-tangent of 34° 20′:—

SOLUTION.—The natural sine of 34° 20′ is .564007, and the natural co-sine is .825770; and by the rule, $\frac{.564007}{.825770}$=.683007, the natural tangent. Also, $\frac{.825770}{.564007}$= 1.464115, the natural co-tangent.

*To find the Secant and Co-secant of any given number of Degrees and Minutes.*

RULE.—Divide unity or 1 by the natural co-sine, and the quotient will be the secant. Also, divide unity by the natural sine, and the result will be the natural co-secant.

EXAMPLE.—To find the natural secant and co-secant of 41° 15′:—

SOLUTION.—The natural sine and co-sine of 41° 15′ are respectively .659346 and .751840; and by the rule, $\frac{1}{.751840}$=1.330069, the secant. Also, $\frac{1}{.659346}$ = 1.516578, the natural co-secant.

*To find the Natural Versed Sine or Co-versed Sine answering to a given number of Degrees and Minutes.*

RULE.—Subtract the natural co-sine from unity or 1, and the remainder will be the natural versed sine. Also, take the natural sine from unity, and the result will be the natural co-versed sine.

EXAMPLE.—To find the versed and co-versed sine of 32° 40′:—

SOLUTION.—The natural sine of 32° 40′ is .539751; also, the natural co-sine is .841825; and by the rule, 1.—.841825 = .158175, the natural versed sine; likewise, 1.—.539751 = .460249, the co-versed sine.

The natural sines, &c. of arcs, corresponding to degrees and minutes only, are in general sufficiently accurate for most practical purposes; but in some of the more rigid mathematical and astronomical calculations it is necessary to obtain them to the nearest second; for which purpose the auxiliary Table of Differences, at page 35, is introduced.

*To find the Natural Sine of a given number of Degrees, Minutes, and Seconds.*

RULE.—Find the sine answering to the given number of degrees and minutes by the foregoing rule; take also from the auxiliary table the difference corresponding to the given number of degrees, which multiply by the given number of seconds, and reject the two right-hand figures in the product; the remaining figures added to the former result will give the natural sine required.

EXAMPLE.—To find the natural sine of 32° 21′ 45″ :—

| | |
|---|---|
| The natural sine of 32° 21′ - - - - - - - - - - - - - - - - - - - - | .535090 |
| The difference corresponding to 32° in the auxiliary table is 409, which multiplied by 45, and rejecting the two right-hand figures in the product, | .000184 |
| Sum = natural sine required - - - - | =.535274 |

*To find the Natural Co-sine of a given number of Degrees, Minutes, and Seconds.*

RULE.—Find the co-sine answering to the given number of degrees and minutes, as before directed; also, subtract 1 from the complement of the given number of degrees, and take from the auxiliary table the difference corresponding to the remainder, which multiply by the given number of seconds, and (rejecting the two right-hand figures) subtract the product from the former result, the remainder will be the natural co-sine required.

EXAMPLE.—To find the natural co-sine of 71° 40′ 25″, or its supplement 108° 19′ 35″ :—

| | |
|---|---|
| The natural co-sine of 71° 40′ - - - - - - - - - - - - - - - - - - | .314545 |
| Also, 90—71=19, and 19—1=18, and the difference corresponding to 18 in the auxiliary table is 460; also, 460×25, omitting the two right-hand figs. | .000115 |
| Remainder = natural co-sine of 71° 40′ 25″ or its supplement 108° 19′ 25″ | .314430 |

*The seven succeeding Tables—viz. the 5th, 6th, 7th, 8th, 9th, 10th and 11th—are so very simple that a particular description would be entirely superfluous.*

---

## TABLE XII.

*To find the Area of any Regular Polygon (not exceeding eleven sides.)*

RULE.—Square the given side, and seek for the result in the upper line, (commencing at 1000 and increasing to 9000) directly under which, and against the name of the polygon, will be found the wholes, and to the right the decimal parts.*

EXAMPLE.—To find the area of an octagon of which the side is 20 :—

SOLUTION.—20×20=400, under which, and in a line with octagon, stands 1931, and to the right 37; accordingly, 1931.37 is the answer.

EXAMPLE II.—To find the area of a pentagon of which the side is 15 :—

SOLUTION.—15×15=225, which when separated is 200+20+5; and

| | |
|---|---|
| Under 200 stands - - - - | 344.09 |
| Under 20 stands - - - - | 34.409 |
| Under 5 stands - - - - | 8.6024 |
| Sum = area required - - | 387.1014 |

---

## TABLE XIII.

*To find the Area of any Regular Solid.*

RULE.—Square the given side, and operate as in Table XII.

EXAMPLE.—To find the area of a hexahedron of which the side is 22 :—

SOLUTION.—22×22=484; this number when separated becomes 400+80+4; and

| | |
|---|---|
| Under 400 stands - - - - | 2400. |
| Under 80 stands - - - - | 480. |
| Under 4 stands - - - - | 24. |
| Sum = area = - - - - - | 2904. |

---

## TABLE XIV.

*To find the Solidity of any Regular Solid.*

RULE.—Cube the given side, and proceed as directed in the description of Tables 12th and 13th.

EXAMPLE.—To find the solid content of an octahedron of which the side is 6 :—

---

* In order to obtain a perfect understanding of this and the two succeeding tables, the reader is referred to the Description of the Traverse Tables.

SOLUTION.—6×6×6=216, which when separated is 200+10+6; and

| | |
|---|---|
| Under 200 stands - - - - | 94.28 |
| Under 10 stands - - - - | 4.714 |
| Under 6 stands - - - - | 2.8284 |
| Sum = the answer = - - - | 101.8224 |

## TABLE XV.

*To find the Area of a Segment of a Circle.*

RULE.—Divide the height or versed sine by the diameter, and seek for the quotient in the column of versed sines headed height. Take out also the corresponding area in the next column on the right hand, which multiply by the square of the diameter, and the result will be the area of the segment.

EXAMPLE.—To find the area of a segment whose height or versed sine is $3\frac{1}{4}$, and the diameter of the circle 50:—

SOLUTION.—$3\frac{1}{4}=3.25$, and $\frac{3.25}{50}=.065$, against which in the table stands .021659; and $50^2\times.021659=54.1475$, the area required.

## TABLE XVI.

*To find the Area of a Zone of a Circle.*

CASE I.—When the zone is less than a semi-circle.

RULE.—Divide the height by the longest chord, and seek the quotient in the column of heights; take out the corresponding area in the next right-hand column, and multiply it by the square of the longest chord: the result will be the area of the zone.

EXAMPLE.—To determine the area of a zone whose longest chord is 50, and height 15:—

SOLUTION. $\frac{15}{50}=.300$, corresponding with which in the table stands .280876, and $50^2\times.280876=702.19$, the area of the zone.

CASE II.—When the zone is greater than a semicircle.

RULE.—Having determined the height on each side of the diameter, proceed by Case I to find the area of each portion separately, and their sum will be the area of the zone.

EXAMPLE.—To find the area of a zone the height of which on each side of the diameter is respectively 20 and 15, and the diameter of the circle 50:—

SOLUTION. $\frac{20}{50}=.400$, corresponding with which in the table is .351824; and $50^2\times.351824=879.56$. Likewise $\frac{15}{50}=.300$, against which in the table stands .280876, and $50^2\times.280876=702.19$; and $879.56+702.19=1581.75$, the area required.

## TABLE XVII.

*To find the Length of an Arc of a Circle, from having the Chord and Height or Versed Sine given.*

RULE.—Divide the height by the chord or base, and the quotient will be the versed sine or height of an arc of which the chord or base is unity. Seek in the column of heights for a number answering to the quotient, and take from the table the corresponding number in the next right-hand column. Multiply the number thus taken out by the base or chord of the arc, and the product will be the length of the arc or curve required.

EXAMPLE.—The profiles of the arches of Southwark bridge (London) are the arcs of circles; the span of the middle arch is 240 feet, and the height 24 feet; to determine the length of the curve:—

SOLUTION. $\frac{24}{240}=.100$, corresponding with which in the table stands 1.02645, and $240\times1.02645=246.348$ feet, the length required.

## TABLE XVIII.

*To find the Length of the Curve of a Right Semi-Ellipse.*

RULE.—Divide the height by the base, and seek for the quotient in the column of heights; take from the table the corresponding number in the next right-hand column; multiply the number thus taken out by the given base, and the product will be the length of the curve required.

EXAMPLE.—The profiles of the arches of Waterloo bridge are semi-ellipses; the span of each is 120 feet, and the height 18 feet; to determine the length of the curve:

SOLUTION. $\frac{28}{120} = .233$, against which in the table stands 1.1901; and $120 \times 1.1901 = 142.812$ feet, the length required.

In this example there is in the division of 28 by 120 a remainder of 40; accordingly the answer 142.812 is less than the truth. Now in order to correct the result, proceed in the same manner to find the length of the curve corresponding to the next greater tabular height, and take the difference between the lengths of the two curves thus found; then as the base of the curve of which the length is required is to the remainder in the operation of division, so is the difference of the curves to the correction required to be added to the length. Thus in the foregoing example, computing the length of the curve from the greater tabular height, the result will be 142.9608; accordingly, the difference between this and the former result is .1488. Hence the analogy, 120 : 40 : : .1488 : .0496, and .0496+142.812 = 142.8616, the true length of the curve. This correction, even to so large an arch, does not amount to seven-eighths of an inch; accordingly, except in cases where the most rigid mathematical accuracy is required, the remainder in the division may be omitted.

---

## TABLES XIX AND XX

Are so very obvious in their application, that a particular description is deemed unnecessary.

# POWERS'S

# MATHEMATICAL TABLES

FOR

# PRACTICAL MEN.

Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for angles to even degrees between 1 and 90.

| Title Column. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Column. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude. | 1 | 99981 | 199997 | 299995 | 399994 | 499992 | 599991 | 699889 | 799888 | 899886 | 89 | Departure. |
| Departure. | | 1745 | 3491 | 5236 | 6981 | 8727 | 10472 | 12217 | 13962 | 15707 | | Latitude. |
| Latitude. | 2 | 99939 | 199878 | 299817 | 399756 | 499695 | 599634 | 699573 | 799512 | 899451 | 88 | Departure. |
| Departure. | | 3490 | 6981 | 10471 | 13961 | 17452 | 20942 | 24433 | 27923 | 31414 | | Latitude. |
| Latitude. | 3 | 99863 | 199726 | 299589 | 399452 | 499315 | 599178 | 699041 | 798904 | 898767 | 87 | Departure. |
| Departure. | | 5234 | 10467 | 15701 | 20934 | 26168 | 31401 | 36635 | 41868 | 47101 | | Latitude. |
| Latitude. | 4 | 99756 | 199512 | 299268 | 399024 | 498780 | 598536 | 698292 | 798048 | 897805 | 86 | Departure. |
| Departure. | | 6978 | 13955 | 20933 | 27910 | 34888 | 41865 | 48843 | 55821 | 62798 | | Latitude. |
| Latitude. | 5 | 99620 | 199241 | 298862 | 398483 | 498104 | 597725 | 697346 | 796967 | 896588 | 85 | Departure. |
| Departure. | | 8721 | 17443 | 26165 | 34886 | 43608 | 52329 | 61051 | 69772 | 78494 | | Latitude. |
| Latitude. | 6 | 99452 | 198904 | 298356 | 397808 | 497260 | 596711 | 696163 | 795615 | 895067 | 84 | Departure. |
| Departure. | | 10452 | 20904 | 31356 | 41808 | 52260 | 62712 | 73164 | 83616 | 94068 | | Latitude. |
| Latitude. | 7 | 99254 | 198508 | 297762 | 397016 | 496270 | 595525 | 694778 | 794032 | 893286 | 83 | Departure. |
| Departure. | | 12192 | 24384 | 36576 | 48767 | 60959 | 73151 | 85343 | 97534 | 109726 | | Latitude. |
| Latitude. | 8 | 99033 | 198065 | 297098 | 396131 | 495163 | 594196 | 693229 | 792261 | 891294 | 82 | Departure. |
| Departure. | | 13932 | 27863 | 41795 | 55727 | 69659 | 83590 | 97522 | 111454 | 125385 | | Latitude. |
| Latitude. | 9 | 98777 | 197554 | 296331 | 395108 | 493884 | 592661 | 691438 | 790215 | 888992 | 81 | Departure. |
| Departure. | | 15643 | 31286 | 46929 | 62572 | 78215 | 93858 | 109501 | 125144 | 140787 | | Latitude. |
| Latitude. | 10 | 98481 | 196962 | 295443 | 393924 | 492405 | 590886 | 689367 | 787848 | 886329 | 80 | Departure. |
| Departure. | | 17365 | 34730 | 52095 | 69460 | 86825 | 104190 | 121555 | 138920 | 156285 | | Latitude. |
| Latitude. | 11 | 98163 | 196326 | 294489 | 392652 | 490815 | 588978 | 687140 | 785303 | 883466 | 79 | Departure. |
| Departure. | | 19081 | 38162 | 57243 | 76323 | 95404 | 114485 | 133566 | 152647 | 171728 | | Latitude. |
| Title Column. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Column. |

Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for angles to even degrees between 1 and 90.

| Title Column. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Column. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude. | 12 | 97.81 | 195.63 | 293.44 | 391.26 | 489.07 | 586.89 | 684.70 | 782.52 | 880.33 | 78 | Departure. |
| Departure. | | 20.79 | 41.58 | 62.37 | 83.16 | 103.96 | 124.75 | 145.54 | 166.33 | 187.12 | | Latitude. |
| Latitude. | 13 | 97.43 | 194.87 | 292.31 | 389.75 | 487.18 | 584.62 | 682.06 | 779.50 | 876.93 | 77 | Departure. |
| Departure. | | 22.50 | 44.99 | 67.49 | 89.98 | 112.48 | 134.97 | 157.47 | 179.96 | 202.46 | | Latitude. |
| Latitude. | 14 | 97.03 | 194.06 | 291.09 | 388.12 | 485.15 | 582.18 | 679.21 | 776.24 | 873.27 | 76 | Departure. |
| Departure. | | 24.19 | 48.38 | 72.58 | 96.77 | 120.96 | 145.15 | 169.35 | 193.54 | 217.73 | | Latitude. |
| Latitude. | 15 | 96.59 | 193.18 | 289.77 | 386.36 | 482.95 | 579.54 | 676.13 | 772.72 | 869.31 | 75 | Departure. |
| Departure. | | 25.88 | 51.76 | 77.65 | 103.53 | 129.41 | 155.29 | 181.18 | 207.06 | 232.94 | | Latitude. |
| Latitude. | 16 | 96.13 | 192.25 | 288.38 | 384.50 | 480.63 | 576.75 | 672.88 | 769.00 | 865.13 | 74 | Departure. |
| Departure. | | 27.56 | 55.13 | 82.69 | 110.25 | 137.82 | 165.38 | 192.94 | 220.51 | 248.07 | | Latitude. |
| Latitude. | 17 | 95.63 | 191.26 | 286.89 | 382.52 | 478.15 | 573.78 | 669.41 | 765.04 | 860.67 | 73 | Departure. |
| Departure. | | 29.24 | 58.47 | 87.71 | 116.94 | 146.18 | 175.41 | 204.65 | 233.88 | 263.12 | | Latitude. |
| Latitude. | 18 | 95.11 | 190.21 | 285.32 | 380.42 | 475.53 | 570.63 | 665.74 | 760.84 | 855.95 | 72 | Departure. |
| Departure. | | 30.90 | 61.80 | 92.71 | 123.61 | 154.51 | 185.41 | 216.31 | 247.21 | 278.12 | | Latitude. |
| Latitude. | 19 | 94.55 | 189.09 | 283.64 | 378.19 | 472.74 | 567.28 | 661.83 | 756.38 | 850.92 | 71 | Departure. |
| Departure. | | 32.56 | 65.11 | 97.67 | 130.23 | 162.78 | 195.34 | 227.90 | 260.45 | 293.01 | | Latitude. |
| Latitude. | 20 | 93.97 | 187.94 | 281.91 | 375.88 | 469.85 | 563.82 | 657.79 | 751.76 | 845.73 | 70 | Departure. |
| Departure. | | 34.20 | 68.40 | 102.60 | 136.80 | 171.00 | 205.20 | 239.40 | 273.60 | 307.80 | | Latitude. |
| Latitude. | 21 | 93.36 | 186.72 | 280.08 | 373.44 | 466.80 | 560.16 | 653.52 | 746.88 | 840.24 | 69 | Departure. |
| Departure. | | 35.84 | 71.67 | 107.51 | 143.35 | 179.18 | 215.02 | 250.86 | 286.69 | 322.53 | | Latitude. |
| Latitude. | 22 | 92.72 | 185.45 | 278.17 | 370.90 | 463.62 | 556.35 | 649.07 | 741.80 | 834.52 | 68 | Departure. |
| Departure. | | 37.46 | 74.92 | 112.38 | 149.84 | 187.30 | 224.76 | 262.22 | 299.68 | 337.14 | | Latitude. |
| Title Column. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Column. |

Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for angles to even degree between 1 and 90.

| Title Column. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Column. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude. | 23 | 92.05 | 184.10 | 276.15 | 368.20 | 460.25 | 552.30 | 644.35 | 736.40 | 828.45 | 67 | Departure. |
| Departure. | | 39.07 | 78.15 | 117.22 | 156.29 | 195.37 | 234.44 | 273.51 | 312.58 | 351.66 | | Latitude. |
| Latitude. | 24 | 91.35 | 182.71 | 274.06 | 365.42 | 456.77 | 548.13 | 639.48 | 730.84 | 822.19 | 66 | Departure. |
| Departure. | | 40.67 | 81.35 | 122.02 | 162.69 | 203.37 | 244.04 | 284.72 | 325.39 | 366.07 | | Latitude. |
| Latitude. | 25 | 90.63 | 181.26 | 271.89 | 362.52 | 453.15 | 543.78 | 634.41 | 725.04 | 815.67 | 65 | Departure. |
| Departure. | | 42.26 | 84.53 | 126.79 | 169.06 | 211.32 | 253.59 | 295.85 | 338.12 | 380.38 | | Latitude. |
| Latitude. | 26 | 89.88 | 179.76 | 269.64 | 359.52 | 449.40 | 539.28 | 629.16 | 719.04 | 808.91 | 64 | Departure. |
| Departure. | | 43.84 | 87.68 | 131.51 | 175.35 | 219.19 | 263.03 | 306.86 | 350.70 | 394.53 | | Latitude. |
| Latitude. | 27 | 89.10 | 178.20 | 267.30 | 356.40 | 445.50 | 534.60 | 623.70 | 712.80 | 801.91 | 63 | Departure. |
| Departure. | | 45.40 | 90.80 | 136.19 | 181.59 | 226.99 | 272.39 | 317.79 | 363.19 | 408.59 | | Latitude. |
| Latitude. | 28 | 88.29 | 176.59 | 264.88 | 353.18 | 441.47 | 529.77 | 618.06 | 706.36 | 794.65 | 62 | Departure. |
| Departure. | | 46.95 | 93.90 | 140.85 | 187.80 | 234.75 | 281.70 | 328.65 | 375.60 | 422.55 | | Latitude. |
| Latitude. | 29 | 87.46 | 174.92 | 262.38 | 349.84 | 437.30 | 524.76 | 612.22 | 699.68 | 787.14 | 61 | Departure. |
| Departure. | | 48.48 | 96.96 | 145.44 | 193.92 | 242.40 | 290.88 | 339.36 | 387.84 | 436.32 | | Latitude. |
| Latitude. | 30 | 86.60 | 173.21 | 259.81 | 346.41 | 433.01 | 519.62 | 606.22 | 692.82 | 779.42 | 60 | Departure. |
| Departure. | | 50.00 | 100.00 | 150.00 | 200.00 | 250.00 | 300.00 | 350.00 | 400.00 | 450.00 | | Latitude. |
| Latitude. | 31 | 85.72 | 171.45 | 257.17 | 342.90 | 428.62 | 514.34 | 600.07 | 685.79 | 771.51 | 59 | Departure. |
| Departure. | | 51.51 | 103.03 | 154.54 | 206.06 | 257.57 | 309.09 | 360.60 | 412.12 | 463.63 | | Latitude. |
| Latitude. | 32 | 84.80 | 169.60 | 254.41 | 339.21 | 424.01 | 508.81 | 593.61 | 678.41 | 763.21 | 58 | Departure. |
| Departure. | | 52.99 | 105.98 | 158.97 | 211.96 | 264.95 | 317.94 | 370.93 | 423.92 | 476.91 | | Latitude. |
| Latitude. | 33 | 83.87 | 167.74 | 251.61 | 335.48 | 419.35 | 503.22 | 587.09 | 670.96 | 754.83 | 57 | Departure. |
| Departure. | | 54.46 | 108.92 | 163.38 | 217.84 | 272.30 | 326.76 | 381.22 | 435.68 | 490.14 | | Latitude. |
| Title Column. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Column. |

Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for angles to even degrees between 1 and 90.

| Title Col. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Col. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude. | 34 | 829 | 165 | 248 | 331 | 414 | 497 | 580 | 663 | 746 | 56 | Departure. |
| Departure. | | 559 | 118 | 167 | 223 | 279 | 335 | 391 | 447 | 503 | | Latitude. |
| Latitude. | 35 | 819 | 163 | 245 | 327 | 409 | 491 | 573 | 655 | 737 | 55 | Departure. |
| Departure. | | 573 | 114 | 172 | 229 | 286 | 344 | 401 | 458 | 516 | | Latitude. |
| Latitude. | 36 | 809 | 161 | 242 | 323 | 404 | 485 | 566 | 647 | 728 | 54 | Departure. |
| Departure. | | 587 | 117 | 176 | 234 | 293 | 352 | 411 | 469 | 528 | | Latitude. |
| Latitude. | 37 | 798 | 159 | 239 | 319 | 398 | 478 | 558 | 638 | 717 | 53 | Departure. |
| Departure. | | 601 | 120 | 180 | 240 | 301 | 361 | 421 | 481 | 541 | | Latitude. |
| Latitude. | 38 | 788 | 157 | 236 | 315 | 394 | 472 | 551 | 630 | 709 | 52 | Departure. |
| Departure. | | 615 | 123 | 185 | 246 | 308 | 369 | 431 | 492 | 554 | | Latitude. |
| Latitude. | 39 | 777 | 155 | 233 | 310 | 388 | 466 | 543 | 621 | 699 | 51 | Departure. |
| Departure. | | 629 | 125 | 188 | 251 | 314 | 377 | 440 | 502 | 565 | | Latitude. |
| Latitude. | 40 | 766 | 153 | 230 | 306 | 383 | 459 | 536 | 613 | 689 | 50 | Departure. |
| Departure. | | 642 | 128 | 192 | 257 | 321 | 385 | 449 | 513 | 578 | | Latitude. |
| Latitude. | 41 | 754 | 150 | 226 | 301 | 377 | 452 | 527 | 603 | 678 | 49 | Departure. |
| Departure. | | 656 | 131 | 197 | 262 | 328 | 393 | 459 | 525 | 590 | | Latitude. |
| Latitude. | 42 | 743 | 148 | 223 | 297 | 371 | 445 | 520 | 594 | 668 | 48 | Departure. |
| Departure. | | 669 | 134 | 201 | 268 | 335 | 402 | 469 | 536 | 603 | | Latitude. |
| Latitude. | 43 | 731 | 146 | 219 | 292 | 365 | 438 | 511 | 584 | 657 | 47 | Departure. |
| Departure. | | 682 | 136 | 205 | 273 | 341 | 409 | 478 | 546 | 614 | | Latitude. |
| Latitude. | 44 | 719 | 143 | 215 | 287 | 359 | 431 | 502 | 574 | 646 | 46 | Departure. |
| Departure. | | 694 | 139 | 208 | 278 | 347 | 417 | 486 | 556 | 625 | | Latitude. |
| Latitude. | 45 | 707 | 141 | 212 | 283 | 354 | 424 | 495 | 566 | 636 | 45 | Departure. |
| Departure. | | 707 | 141 | 212 | 283 | 354 | 424 | 495 | 566 | 636 | | Latitude. |
| Title Col. | Deg. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Deg. | Title Col. |

Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for every point and quarter point of the compass.

| Title Column. | Points. | 1°0′ | 2°0′ | 3°0′ | 4°0′ | 5°0′ | 6°0′ | 7°0′ | 8°0′ | 9°0′ | Points. | Title Column. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude. | ¼ | 999 | 1997 | 2996 | 3995 | 4994 | 5993 | 6992 | 7990 | 8990 | 7¾ | Departure. |
| Departure. | | 49 | 98 | 147 | 197 | 246 | 295 | 344 | 433 | 442 | | Latitude. |
| Latitude. | ½ | 995 | 1990 | 2986 | 3981 | 4976 | 5971 | 6966 | 7961 | 8957 | 7½ | Departure. |
| Departure. | | 98 | 196 | 294 | 392 | 490 | 588 | 686 | 784 | 882 | | Latitude. |
| Latitude. | ¾ | 989 | 1978 | 2968 | 3957 | 4946 | 5935 | 6924 | 7914 | 8903 | 7¼ | Departure. |
| Departure. | | 147 | 293 | 440 | 587 | 733 | 880 | 1027 | 1173 | 1320 | | Latitude. |
| Latitude. | 1 | 981 | 1962 | 2942 | 3923 | 4904 | 5885 | 6866 | 7846 | 8827 | 7 | Departure. |
| Departure. | | 195 | 390 | 585 | 780 | 975 | 1171 | 1366 | 1561 | 1756 | | Latitude. |
| Latitude. | 1¼ | 970 | 1940 | 2910 | 3880 | 4850 | 5820 | 6790 | 7760 | 8730 | 6¾ | Departure. |
| Departure. | | 243 | 486 | 729 | 972 | 1215 | 1458 | 1701 | 1944 | 2187 | | Latitude. |
| Latitude. | 1½ | 957 | 1913 | 2871 | 3828 | 4785 | 5741 | 6698 | 7656 | 8612 | 6½ | Departure. |
| Departure. | | 290 | 581 | 871 | 1162 | 1452 | 1743 | 2033 | 2323 | 2614 | | Latitude. |
| Latitude. | 1¾ | 942 | 1883 | 2825 | 3766 | 4708 | 5649 | 6591 | 7533 | 8474 | 6¼ | Departure. |
| Departure. | | 337 | 674 | 1010 | 1347 | 1684 | 2021 | 2358 | 2695 | 3031 | | Latitude. |
| Latitude. | 2 | 924 | 1848 | 2772 | 3696 | 4619 | 5543 | 6467 | 7391 | 8315 | 6 | Departure. |
| Departure. | | 383 | 765 | 1148 | 1531 | 1913 | 2296 | 2679 | 3061 | 3444 | | Latitude. |
| Title Column. | Points. | 1°0′ | 2°0′ | 3°0′ | 4°0′ | 5°0′ | 6°0′ | 7°0′ | 8°0′ | 9°0′ | Points. | Title Column. |

Showing the difference of Latitude and Departure corresponding to any whole or fractional distance not exceeding 900, and for every point and quarter point of the compass.

| Title Column. | Points. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Points. | Title Column. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Latitude. | $2\frac{1}{4}$ | 904 | 1808 | 2712 | 3616 | 4520 | 5424 | 6328 | 7232 | 8136 | $5\frac{3}{4}$ | Departure. |
| Departure. | | 428 | 855 | 1283 | 1710 | 2138 | 2566 | 2993 | 3421 | 3849 | | Latitude. |
| Latitude. | $2\frac{1}{2}$ | 882 | 1764 | 2646 | 3528 | 4409 | 5291 | 6173 | 7055 | 7937 | $5\frac{1}{2}$ | Departure. |
| Departure. | | 472 | 943 | 1415 | 1886 | 2358 | 2829 | 3301 | 3772 | 4244 | | Latitude. |
| Latitude. | $2\frac{3}{4}$ | 858 | 1716 | 2573 | 3431 | 4289 | 5147 | 6004 | 6862 | 7720 | $5\frac{1}{4}$ | Departure. |
| Departure. | | 514 | 1028 | 1542 | 2056 | 2570 | 3084 | 3598 | 4112 | 4626 | | Latitude. |
| Latitude. | 3 | 831 | 1663 | 2494 | 3326 | 4157 | 4989 | 5820 | 6652 | 7483 | 5 | Departure. |
| Departure. | | 556 | 1111 | 1667 | 2222 | 2778 | 3333 | 3889 | 4444 | 5000 | | Latitude. |
| Latitude. | $3\frac{1}{4}$ | 803 | 1606 | 2409 | 3212 | 4015 | 4818 | 5621 | 6424 | 7228 | $4\frac{3}{4}$ | Departure. |
| Departure. | | 596 | 1191 | 1787 | 2383 | 2979 | 3575 | 4170 | 4766 | 5362 | | Latitude. |
| Latitude. | $3\frac{1}{2}$ | 773 | 1546 | 2319 | 3092 | 3865 | 4638 | 5411 | 6184 | 6957 | $4\frac{1}{2}$ | Departure. |
| Departure. | | 635 | 1269 | 1904 | 2538 | 3173 | 3807 | 4442 | 5076 | 5711 | | Latitude. |
| Latitude. | $3\frac{3}{4}$ | 741 | 1482 | 2223 | 2964 | 3705 | 4446 | 5187 | 5928 | 6669 | $4\frac{1}{4}$ | Departure. |
| Departure. | | 672 | 1343 | 2015 | 2686 | 3358 | 4029 | 4701 | 5372 | 6044 | | Latitude. |
| Latitude. | 4 | 707 | 1414 | 2121 | 2828 | 3535 | 4242 | 4949 | 5656 | 6363 | 4 | Departure. |
| Departure. | | 707 | 1414 | 2121 | 2828 | 3535 | 4242 | 4949 | 5656 | 6363 | | Latitude. |
| Title Column. | Points. | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | Points. | Title Column. |

## TABLE III.

Logarithms of Numbers from 1 to 10,000, with their Differences.

| No. | Logar. | No. | Logar. | No. | Logar. | No. | Logar. |
|---|---|---|---|---|---|---|---|
| 1 | 000000 | 26 | 414973 | 51 | 707570 | 76 | 880014 |
| 2 | 301030 | 27 | 431364 | 52 | 716003 | 77 | 886491 |
| 3 | 477121 | 28 | 447158 | 53 | 724276 | 78 | 892095 |
| 4 | 602060 | 29 | 462398 | 54 | 732394 | 79 | 897627 |
| 5 | 698970 | 30 | 477121 | 55 | 740363 | 80 | 903090 |
| 6 | 778151 | 31 | 491362 | 56 | 748188 | 81 | 908485 |
| 7 | 845098 | 32 | 505150 | 57 | 755875 | 82 | 913814 |
| 8 | 903090 | 33 | 518514 | 58 | 763428 | 83 | 919078 |
| 9 | 954243 | 34 | 531479 | 59 | 770852 | 84 | 924279 |
| 10 | 000000 | 35 | 544068 | 60 | 778151 | 85 | 929419 |
| 11 | 041393 | 36 | 556303 | 61 | 785330 | 86 | 934498 |
| 12 | 079181 | 37 | 568202 | 62 | 792392 | 87 | 939519 |
| 13 | 113943 | 38 | 579784 | 63 | 799341 | 88 | 944483 |
| 14 | 146128 | 39 | 591065 | 64 | 806180 | 89 | 949390 |
| 15 | 176091 | 40 | 602060 | 65 | 812913 | 90 | 954243 |
| 16 | 204120 | 41 | 612784 | 66 | 819544 | 91 | 959041 |
| 17 | 230449 | 42 | 623249 | 67 | 826075 | 92 | 963788 |
| 18 | 255273 | 43 | 633468 | 68 | 832509 | 93 | 968483 |
| 19 | 278754 | 44 | 643453 | 69 | 838849 | 94 | 973128 |
| 20 | 301030 | 45 | 653213 | 70 | 845098 | 95 | 977724 |
| 21 | 322219 | 46 | 662758 | 71 | 851258 | 96 | 982271 |
| 22 | 342423 | 47 | 672098 | 72 | 857333 | 97 | 986772 |
| 23 | 361728 | 48 | 681241 | 73 | 863323 | 98 | 991226 |
| 24 | 380211 | 49 | 690196 | 74 | 869232 | 99 | 995635 |
| 25 | 397940 | 50 | 698970 | 75 | 875061 | | 000000 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 100 | 000000 | 000434 | 000868 | 001301 | 001734 | 002166 | 002598 | 003029 | 003460 | 003891 | 432 |
| 101 | 004321 | 004751 | 005180 | 005609 | 006038 | 006466 | 006894 | 007321 | 007748 | 008174 | 428 |
| 102 | 008600 | 009026 | 009451 | 009876 | 010300 | 010724 | 011147 | 011570 | 011993 | 012415 | 424 |
| 103 | 012837 | 013259 | 013680 | 014100 | 014520 | 014940 | 015360 | 015779 | 016197 | 016615 | 420 |
| 104 | 017033 | 017451 | 017868 | 018284 | 018700 | 019116 | 019532 | 019947 | 020361 | 020775 | 416 |
| 105 | 021189 | 021603 | 022016 | 022428 | 022841 | 023252 | 023664 | 024075 | 024486 | 024896 | 412 |
| 106 | 025306 | 025715 | 026124 | 026533 | 026942 | 027350 | 027757 | 028164 | 028571 | 028978 | 408 |
| 107 | 029384 | 029789 | 030195 | 030600 | 031004 | 031408 | 031812 | 032216 | 032619 | 033021 | 404 |
| 108 | 033424 | 033826 | 034227 | 034628 | 035029 | 035430 | 035830 | 036229 | 036629 | 037028 | 400 |
| 109 | 037426 | 037825 | 038223 | 038620 | 039017 | 039414 | 039811 | 040207 | 040602 | 040998 | 397 |
| 110 | 041393 | 041787 | 042182 | 042575 | 042969 | 043362 | 043755 | 044148 | 044540 | 044931 | 393 |
| 111 | 045323 | 045714 | 046105 | 046495 | 046885 | 047275 | 047664 | 048053 | 048442 | 048830 | 390 |
| 112 | 049218 | 049606 | 049993 | 050380 | 050766 | 051152 | 051538 | 051924 | 052309 | 052694 | 386 |
| 113 | 053078 | 053463 | 053846 | 054230 | 054613 | 054996 | 055378 | 055760 | 056142 | 056524 | 383 |
| 114 | 056905 | 057286 | 057666 | 058046 | 058426 | 058805 | 059185 | 059563 | 059942 | 060320 | 379 |
| 115 | 060698 | 061075 | 061452 | 061829 | 062206 | 062582 | 062958 | 063333 | 063709 | 064083 | 376 |
| 116 | 064458 | 064832 | 065206 | 065580 | 065953 | 066326 | 066699 | 067071 | 067443 | 067814 | 373 |
| 117 | 068186 | 068557 | 068928 | 069298 | 069668 | 070038 | 070407 | 070776 | 071145 | 071514 | 370 |
| 118 | 071882 | 072250 | 072617 | 072985 | 073352 | 073718 | 074085 | 074451 | 074816 | 075182 | 366 |
| 119 | 075547 | 075912 | 076276 | 076640 | 077004 | 077368 | 077731 | 078094 | 078457 | 078819 | 363 |
| 120 | 079181 | 079543 | 079904 | 080266 | 080626 | 080987 | 081347 | 081707 | 082067 | 082426 | 360 |
| 121 | 082785 | 083144 | 083503 | 083861 | 084219 | 084576 | 084934 | 085291 | 085647 | 086004 | 357 |
| 122 | 086360 | 086716 | 087071 | 087426 | 087781 | 088136 | 088490 | 088845 | 089198 | 089552 | 355 |
| 123 | 089905 | 090258 | 090611 | 090963 | 091315 | 091667 | 092018 | 092370 | 092721 | 093071 | 352 |
| 124 | 093422 | 093772 | 094122 | 094471 | 094820 | 095169 | 095518 | 095866 | 096215 | 096562 | 349 |
| 125 | 096910 | 097257 | 097604 | 097951 | 098297 | 098644 | 098990 | 099335 | 099681 | 100026 | 346 |
| 126 | 100370 | 100715 | 101059 | 101403 | 101747 | 102090 | 102434 | 102777 | 103119 | 103462 | 343 |
| 127 | 103804 | 104146 | 104487 | 104828 | 105169 | 105510 | 105851 | 106191 | 106531 | 106870 | 341 |
| 128 | 107210 | 107549 | 107888 | 108227 | 108565 | 108903 | 109241 | 109578 | 109916 | 110253 | 338 |
| 129 | 110590 | 110926 | 111262 | 111598 | 111934 | 112270 | 112605 | 112940 | 113275 | 113609 | 335 |
| 130 | 113943 | 114277 | 114611 | 114944 | 115278 | 115610 | 115943 | 116276 | 116608 | 116940 | 332 |
| 131 | 117271 | 117603 | 117934 | 118265 | 118595 | 118926 | 119256 | 119586 | 119915 | 120245 | 330 |
| 132 | 120574 | 120903 | 121231 | 121560 | 121888 | 122216 | 122543 | 122871 | 123198 | 123525 | 328 |
| 133 | 123852 | 124178 | 124504 | 124830 | 125156 | 125481 | 125806 | 126131 | 126456 | 126781 | 325 |
| 134 | 127105 | 127429 | 127752 | 128076 | 128399 | 128722 | 129045 | 129368 | 129690 | 130012 | 323 |
| 135 | 130334 | 130655 | 130977 | 131298 | 131619 | 131939 | 132260 | 132580 | 132900 | 133219 | 321 |
| 136 | 133539 | 133858 | 134177 | 134496 | 134814 | 135133 | 135451 | 135768 | 136086 | 136403 | 318 |
| 137 | 136721 | 137037 | 137354 | 137670 | 137987 | 138303 | 138618 | 138934 | 139249 | 139564 | 316 |
| 138 | 139879 | 140194 | 140508 | 140822 | 141136 | 141450 | 141763 | 142076 | 142389 | 142702 | 314 |
| 139 | 143015 | 143327 | 143639 | 143951 | 144263 | 144574 | 144885 | 145196 | 145507 | 145818 | 311 |
| 140 | 146128 | 146438 | 146748 | 147058 | 147367 | 147676 | 147985 | 148294 | 148603 | 148911 | 309 |
| 141 | 149219 | 149527 | 149835 | 150142 | 150449 | 150756 | 151063 | 151370 | 151676 | 151982 | 307 |
| 142 | 152288 | 152594 | 152900 | 153205 | 153510 | 153815 | 154119 | 154424 | 154728 | 155032 | 305 |
| 143 | 155336 | 155640 | 155943 | 156246 | 156549 | 156852 | 157154 | 157457 | 157759 | 158061 | 303 |
| 144 | 158362 | 158664 | 158965 | 159266 | 159567 | 159868 | 160168 | 160468 | 160768 | 161068 | 300 |
| 145 | 161368 | 161667 | 161967 | 162266 | 162564 | 162863 | 163161 | 163460 | 163757 | 164055 | 298 |
| 146 | 164353 | 164650 | 164947 | 165244 | 165541 | 165838 | 166134 | 166430 | 166726 | 167022 | 296 |
| 147 | 167317 | 167613 | 167908 | 168203 | 168497 | 168792 | 169086 | 169380 | 169674 | 169968 | 294 |
| 148 | 170262 | 170555 | 170848 | 171141 | 171434 | 171726 | 172018 | 172311 | 172603 | 172895 | 292 |
| 149 | 173186 | 173478 | 173769 | 174060 | 174351 | 174641 | 174932 | 175222 | 175512 | 175802 | 290 |
| 150 | 176091 | 176381 | 176670 | 176959 | 177248 | 177536 | 177825 | 178113 | 178401 | 178689 | 288 |
| 151 | 178977 | 179264 | 179552 | 179839 | 180126 | 180413 | 180699 | 180986 | 181272 | 181558 | 287 |
| 152 | 181844 | 182129 | 182415 | 182700 | 182985 | 183270 | 183554 | 183839 | 184123 | 184407 | 285 |
| 153 | 184691 | 184975 | 185259 | 185542 | 185825 | 186108 | 186391 | 186674 | 186956 | 187239 | 283 |
| 154 | 187521 | 187803 | 188084 | 188366 | 188647 | 188928 | 189209 | 189490 | 189771 | 190051 | 281 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 155 | 190332 | 190612 | 190892 | 191171 | 191451 | 191730 | 192010 | 192289 | 192567 | 192846 | 279 |
| 156 | 193125 | 193425 | 193681 | 193959 | 194237 | 194514 | 194792 | 195069 | 195346 | 195623 | 278 |
| 157 | 195900 | 196176 | 196452 | 196729 | 197005 | 197281 | 197556 | 197832 | 198107 | 198382 | 276 |
| 158 | 198657 | 198932 | 199206 | 199481 | 199755 | 200029 | 200303 | 200577 | 200850 | 201124 | 274 |
| 159 | 201397 | 201670 | 201943 | 202216 | 202488 | 202761 | 203033 | 203305 | 203577 | 203848 | 272 |
| 160 | 204120 | 204391 | 204662 | 204933 | 205204 | 205475 | 205745 | 206016 | 206286 | 206556 | 271 |
| 161 | 206826 | 207096 | 207365 | 207634 | 207904 | 208173 | 208441 | 208710 | 208979 | 209247 | 269 |
| 162 | 209515 | 209783 | 210051 | 210319 | 210586 | 210853 | 211121 | 211388 | 211654 | 211921 | 267 |
| 163 | 212188 | 212454 | 212720 | 212986 | 213252 | 213518 | 213783 | 214049 | 214314 | 214579 | 266 |
| 164 | 214844 | 215109 | 215373 | 215638 | 215902 | 216166 | 216430 | 216694 | 216957 | 217221 | 264 |
| 165 | 217484 | 217747 | 218010 | 218273 | 218536 | 218798 | 219060 | 219323 | 219585 | 219846 | 262 |
| 166 | 220108 | 220370 | 220631 | 220892 | 221153 | 221414 | 221675 | 221936 | 222196 | 222456 | 261 |
| 167 | 222717 | 222976 | 223236 | 223496 | 223756 | 224015 | 224274 | 224533 | 224792 | 225051 | 259 |
| 168 | 225309 | 225568 | 225826 | 226084 | 226342 | 226600 | 226858 | 227115 | 227372 | 227630 | 258 |
| 169 | 227887 | 228144 | 228400 | 228657 | 228913 | 229170 | 229426 | 229682 | 229938 | 230193 | 256 |
| 170 | 230449 | 230704 | 230960 | 231215 | 231470 | 231724 | 231979 | 232234 | 232488 | 232742 | 255 |
| 171 | 232996 | 233250 | 233504 | 233757 | 234011 | 234264 | 234517 | 234770 | 235023 | 235276 | 253 |
| 172 | 235528 | 235781 | 236033 | 236285 | 236537 | 236789 | 237041 | 237292 | 237544 | 237795 | 252 |
| 173 | 238046 | 238297 | 238548 | 238799 | 239049 | 239300 | 239550 | 239800 | 240050 | 240300 | 250 |
| 174 | 240549 | 240799 | 241048 | 241297 | 241547 | 241795 | 242044 | 242293 | 242541 | 242790 | 249 |
| 175 | 243038 | 243286 | 243534 | 243782 | 244030 | 244277 | 244525 | 244772 | 245019 | 245266 | 247 |
| 176 | 245513 | 245759 | 246006 | 246252 | 246499 | 246745 | 246991 | 247237 | 247482 | 247728 | 246 |
| 177 | 247973 | 248219 | 248464 | 248709 | 248954 | 249198 | 249443 | 249687 | 249932 | 250176 | 245 |
| 178 | 250420 | 250664 | 250908 | 251151 | 251395 | 251638 | 251882 | 252125 | 252368 | 252610 | 243 |
| 179 | 252853 | 253096 | 253338 | 253580 | 253822 | 254065 | 254306 | 254548 | 254790 | 255031 | 242 |
| 180 | 255273 | 255514 | 255755 | 255996 | 256237 | 256477 | 256718 | 256958 | 257198 | 257439 | 241 |
| 181 | 257679 | 257919 | 258158 | 258398 | 258637 | 258877 | 259116 | 259355 | 259594 | 259833 | 239 |
| 182 | 260071 | 260310 | 260548 | 260787 | 261025 | 261263 | 261501 | 261739 | 261976 | 262214 | 238 |
| 183 | 262451 | 262688 | 262926 | 263163 | 263399 | 263636 | 263873 | 264109 | 264346 | 264582 | 237 |
| 184 | 264818 | 265054 | 265290 | 265525 | 265761 | 265996 | 266232 | 266467 | 266702 | 266937 | 235 |
| 185 | 267172 | 267406 | 267641 | 267875 | 268110 | 268344 | 268578 | 268812 | 269046 | 269279 | 234 |
| 186 | 269513 | 269746 | 269980 | 270213 | 270446 | 270679 | 270912 | 271144 | 271377 | 271609 | 233 |
| 187 | 271842 | 272074 | 272306 | 272538 | 272770 | 273001 | 273233 | 273464 | 273696 | 273927 | 232 |
| 188 | 274158 | 274389 | 274620 | 274850 | 275081 | 275311 | 275542 | 275772 | 276002 | 276232 | 230 |
| 189 | 276462 | 276692 | 276921 | 277151 | 277380 | 277609 | 277838 | 278067 | 278296 | 278525 | 229 |
| 190 | 278754 | 278982 | 279210 | 279439 | 279667 | 279895 | 280123 | 280351 | 280578 | 280806 | 228 |
| 191 | 281033 | 281261 | 281488 | 281715 | 281942 | 282169 | 282396 | 282622 | 282849 | 283075 | 227 |
| 192 | 283301 | 283527 | 283753 | 283979 | 284205 | 284431 | 284656 | 284882 | 285107 | 285332 | 226 |
| 193 | 285557 | 285782 | 286007 | 286232 | 286457 | 286681 | 286905 | 287130 | 287354 | 287578 | 224 |
| 194 | 287802 | 288026 | 288249 | 288473 | 288696 | 288920 | 289143 | 289366 | 289589 | 289812 | 223 |
| 195 | 290035 | 290257 | 290480 | 290702 | 290925 | 291147 | 291369 | 291591 | 291813 | 292034 | 222 |
| 196 | 292256 | 292478 | 292699 | 292920 | 293142 | 293363 | 293584 | 293804 | 294025 | 294246 | 221 |
| 197 | 294466 | 294687 | 294907 | 295127 | 295347 | 295567 | 295787 | 296007 | 296226 | 296446 | 220 |
| 198 | 296665 | 296885 | 297104 | 297323 | 297542 | 297761 | 297979 | 298198 | 298416 | 298635 | 219 |
| 199 | 298853 | 299071 | 299289 | 299507 | 299725 | 299943 | 300161 | 300378 | 300596 | 300813 | 218 |
| 200 | 301030 | 301247 | 301464 | 301681 | 301898 | 302114 | 302331 | 302547 | 302764 | 302980 | 217 |
| 201 | 303196 | 303412 | 303628 | 303844 | 304060 | 304275 | 304491 | 304706 | 304921 | 305136 | 216 |
| 202 | 305351 | 305566 | 305781 | 305996 | 306211 | 306425 | 306639 | 306854 | 307068 | 307282 | 214 |
| 203 | 307496 | 307710 | 307924 | 308137 | 308351 | 308564 | 308778 | 308991 | 309204 | 309417 | 213 |
| 204 | 309630 | 309843 | 310056 | 310268 | 310481 | 310693 | 310906 | 311118 | 311330 | 311542 | 212 |
| 205 | 311754 | 311966 | 312177 | 312389 | 312600 | 312812 | 313023 | 313234 | 313445 | 313656 | 211 |
| 206 | 313867 | 314078 | 314289 | 314499 | 314710 | 314920 | 315130 | 315341 | 315551 | 315761 | 210 |
| 207 | 315970 | 316180 | 316390 | 316599 | 316809 | 317018 | 317227 | 317437 | 317646 | 317855 | 209 |
| 208 | 318063 | 318272 | 318481 | 318689 | 318898 | 319106 | 319314 | 319523 | 319731 | 319938 | 208 |
| 209 | 320146 | 320354 | 320562 | 320769 | 320977 | 321184 | 321391 | 321599 | 321806 | 322012 | 207 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dif. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 210 | 322219 | 322426 | 322633 | 322839 | 323046 | 323252 | 323458 | 323665 | 323871 | 324077 | 206 |
| 211 | 324283 | 324488 | 324694 | 324900 | 325105 | 325310 | 325516 | 325721 | 325926 | 326131 | 205 |
| 212 | 326336 | 326541 | 326745 | 326950 | 327155 | 327359 | 327563 | 327768 | 327972 | 328176 | 204 |
| 213 | 328380 | 328583 | 328787 | 328991 | 329194 | 329398 | 329601 | 329805 | 330008 | 330211 | 203 |
| 214 | 330414 | 330617 | 330820 | 331022 | 331225 | 331427 | 331630 | 331832 | 332034 | 332236 | 202 |
| 215 | 332439 | 332640 | 332842 | 333044 | 333246 | 333447 | 333649 | 333850 | 334051 | 334253 | 202 |
| 216 | 334454 | 334655 | 334856 | 335057 | 335257 | 335458 | 335659 | 335859 | 336059 | 336260 | 201 |
| 217 | 336460 | 336660 | 336860 | 337060 | 337260 | 337459 | 337659 | 337858 | 338058 | 338257 | 200 |
| 218 | 338457 | 338656 | 338855 | 339054 | 339253 | 339451 | 339650 | 339849 | 340047 | 340246 | 199 |
| 219 | 340444 | 340642 | 340841 | 341039 | 341237 | 341435 | 341632 | 341830 | 342028 | 342225 | 198 |
| 220 | 342423 | 342620 | 342817 | 343015 | 343212 | 343409 | 343606 | 343802 | 343999 | 344196 | 197 |
| 221 | 344392 | 344589 | 344785 | 344981 | 345178 | 345374 | 345570 | 345766 | 345962 | 346157 | 196 |
| 222 | 346353 | 346549 | 346744 | 346940 | 347135 | 347330 | 347525 | 347720 | 347915 | 348110 | 195 |
| 223 | 348305 | 348500 | 348694 | 348889 | 349083 | 349278 | 349472 | 349666 | 349860 | 350054 | 194 |
| 224 | 350248 | 350442 | 350636 | 350829 | 351023 | 351216 | 351410 | 351603 | 351796 | 351990 | 193 |
| 225 | 352183 | 352376 | 352568 | 352761 | 352954 | 353147 | 353339 | 353532 | 353724 | 353916 | 193 |
| 226 | 354108 | 354301 | 354493 | 354685 | 354876 | 355068 | 355260 | 355452 | 355643 | 355835 | 192 |
| 227 | 356026 | 356217 | 356408 | 356599 | 356791 | 356981 | 357172 | 357363 | 357554 | 357744 | 191 |
| 228 | 357935 | 358125 | 358316 | 358506 | 358696 | 358886 | 359076 | 359266 | 359456 | 359646 | 190 |
| 229 | 359836 | 360025 | 360215 | 360404 | 360593 | 360783 | 360972 | 361161 | 361350 | 361539 | 189 |
| 230 | 361728 | 361917 | 362105 | 362294 | 362483 | 362671 | 362859 | 363048 | 363236 | 363424 | 188 |
| 231 | 363612 | 363800 | 363988 | 364176 | 364363 | 364551 | 364739 | 364926 | 365113 | 365301 | 188 |
| 232 | 365488 | 365675 | 365862 | 366049 | 366236 | 366423 | 366610 | 366796 | 366983 | 367170 | 187 |
| 233 | 367356 | 367542 | 367729 | 367915 | 368101 | 368287 | 368473 | 368659 | 368845 | 369030 | 186 |
| 234 | 369216 | 369401 | 369587 | 369772 | 369958 | 370143 | 370328 | 370513 | 370698 | 370883 | 185 |
| 235 | 371068 | 371253 | 371437 | 371622 | 371807 | 371991 | 372175 | 372360 | 372544 | 372728 | 184 |
| 236 | 372912 | 373096 | 373280 | 373464 | 373648 | 373831 | 374015 | 374198 | 374382 | 374565 | 184 |
| 237 | 374748 | 374932 | 375115 | 375298 | 375481 | 375664 | 375846 | 376029 | 376212 | 376394 | 183 |
| 238 | 376577 | 376759 | 376942 | 377124 | 377306 | 377488 | 377670 | 377852 | 378034 | 378216 | 182 |
| 239 | 378398 | 378580 | 378761 | 378943 | 379124 | 379306 | 379487 | 379668 | 379849 | 380030 | 181 |
| 240 | 380211 | 380392 | 380573 | 380754 | 380935 | 381115 | 381296 | 381476 | 381657 | 381837 | 181 |
| 241 | 382017 | 382197 | 382377 | 382557 | 382737 | 382917 | 383097 | 383277 | 383456 | 383636 | 180 |
| 242 | 383815 | 383995 | 384174 | 384353 | 384533 | 384712 | 384891 | 385070 | 385249 | 385428 | 179 |
| 243 | 385606 | 385785 | 385964 | 386142 | 386321 | 386499 | 386677 | 386856 | 387034 | 387212 | 178 |
| 244 | 387390 | 387568 | 387746 | 387924 | 388101 | 388279 | 388457 | 388634 | 388811 | 388989 | 178 |
| 245 | 389166 | 389343 | 389521 | 389698 | 389875 | 390052 | 390228 | 390405 | 390582 | 390759 | 177 |
| 246 | 390935 | 391112 | 391288 | 391464 | 391641 | 391817 | 391993 | 392169 | 392345 | 392521 | 176 |
| 247 | 392697 | 392873 | 393049 | 393224 | 393400 | 393575 | 393751 | 393926 | 394101 | 394277 | 176 |
| 248 | 394452 | 394627 | 394802 | 394977 | 395152 | 395326 | 395501 | 395676 | 395850 | 396025 | 175 |
| 249 | 396199 | 396374 | 396548 | 396722 | 396896 | 397071 | 397245 | 397419 | 397592 | 397766 | 174 |
| 250 | 397940 | 398114 | 398287 | 398461 | 398634 | 398808 | 398981 | 399154 | 399328 | 399501 | 173 |
| 251 | 399674 | 399847 | 400020 | 400193 | 400365 | 400538 | 400711 | 400883 | 401056 | 401228 | 173 |
| 252 | 401401 | 401573 | 401745 | 401917 | 402089 | 402261 | 402433 | 402605 | 402777 | 402949 | 172 |
| 253 | 403121 | 403292 | 403464 | 403635 | 403807 | 403978 | 404149 | 404321 | 404492 | 404663 | 171 |
| 254 | 404834 | 405005 | 405176 | 405346 | 405517 | 405688 | 405858 | 406029 | 406199 | 406370 | 171 |
| 255 | 406540 | 406711 | 406881 | 407051 | 407221 | 407391 | 407561 | 407731 | 407901 | 408070 | 170 |
| 256 | 408240 | 408410 | 408579 | 408749 | 408918 | 409087 | 409257 | 409426 | 409595 | 409764 | 169 |
| 257 | 409933 | 410102 | 410271 | 410440 | 410609 | 410777 | 410946 | 411114 | 411283 | 411451 | 169 |
| 258 | 411620 | 411788 | 411956 | 412124 | 412293 | 412461 | 412629 | 412796 | 412964 | 413132 | 168 |
| 259 | 413300 | 413467 | 413635 | 413803 | 413970 | 414137 | 414305 | 414472 | 414639 | 414806 | 167 |
| 260 | 414973 | 415140 | 415307 | 415474 | 415641 | 415808 | 415974 | 416141 | 416308 | 416474 | 167 |
| 261 | 416641 | 416807 | 416973 | 417139 | 417306 | 417472 | 417638 | 417804 | 417970 | 418136 | 166 |
| 262 | 418301 | 418467 | 418633 | 418798 | 418964 | 419129 | 419295 | 419460 | 419625 | 419791 | 165 |
| 263 | 419956 | 420121 | 420286 | 420451 | 420616 | 420781 | 420945 | 421110 | 421275 | 421439 | 165 |
| 264 | 421604 | 421768 | 421933 | 422097 | 422262 | 422426 | 422590 | 422754 | 422918 | 423082 | 164 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 265 | 423246 | 423410 | 423574 | 423737 | 423901 | 424065 | 424228 | 424392 | 424555 | 424718 | 164 |
| 266 | 424882 | 425045 | 425208 | 425371 | 425534 | 425697 | 425860 | 426023 | 426186 | 426349 | 163 |
| 267 | 426511 | 426674 | 426837 | 426999 | 427161 | 427324 | 427486 | 427648 | 427811 | 427973 | 162 |
| 268 | 428135 | 428297 | 428459 | 428621 | 428783 | 428944 | 429106 | 429268 | 429429 | 429591 | 162 |
| 269 | 429752 | 429914 | 430075 | 430236 | 430398 | 430559 | 430720 | 430881 | 431042 | 431203 | 161 |
| 270 | 431364 | 431525 | 431685 | 431846 | 432007 | 432167 | 432328 | 432488 | 432649 | 432809 | 160 |
| 271 | 432969 | 433130 | 433290 | 433450 | 433610 | 433770 | 433930 | 434090 | 434250 | 434409 | 160 |
| 272 | 434569 | 434729 | 434888 | 435048 | 435207 | 435367 | 435526 | 435685 | 435844 | 436004 | 159 |
| 273 | 436163 | 436322 | 436481 | 436640 | 436799 | 436957 | 437116 | 437275 | 437433 | 437592 | 159 |
| 274 | 437751 | 437909 | 438068 | 438226 | 438384 | 438542 | 438701 | 438859 | 439017 | 439175 | 158 |
| 275 | 439333 | 439491 | 439648 | 439806 | 439964 | 440122 | 440279 | 440437 | 440594 | 440752 | 158 |
| 276 | 440909 | 441066 | 441224 | 441381 | 441538 | 441695 | 441852 | 442009 | 442166 | 442323 | 157 |
| 277 | 442480 | 442637 | 442793 | 442950 | 443107 | 443263 | 443420 | 443576 | 443732 | 443889 | 157 |
| 278 | 444045 | 444201 | 444357 | 444513 | 444669 | 444825 | 444981 | 445137 | 445293 | 445449 | 156 |
| 279 | 445604 | 445760 | 445915 | 446071 | 446226 | 446382 | 446537 | 446693 | 446848 | 447003 | 155 |
| 280 | 447158 | 447313 | 447468 | 447623 | 447778 | 447933 | 448088 | 448242 | 448397 | 448552 | 155 |
| 281 | 448706 | 448861 | 449015 | 449170 | 449324 | 449478 | 449633 | 449787 | 449941 | 450095 | 154 |
| 282 | 450249 | 450403 | 450557 | 450711 | 450865 | 451019 | 451172 | 451326 | 451479 | 451633 | 154 |
| 283 | 451786 | 451940 | 452093 | 452247 | 452400 | 452553 | 452706 | 452859 | 453012 | 453165 | 153 |
| 284 | 453318 | 453471 | 453624 | 453777 | 453930 | 454082 | 454235 | 454388 | 454540 | 454692 | 153 |
| 285 | 454845 | 454997 | 455150 | 455302 | 455454 | 455606 | 455758 | 455910 | 456062 | 456214 | 152 |
| 286 | 456366 | 456518 | 456670 | 456821 | 456973 | 457125 | 457276 | 457428 | 457579 | 457731 | 152 |
| 287 | 457882 | 458033 | 458184 | 458336 | 458487 | 458638 | 458789 | 458940 | 459091 | 459242 | 151 |
| 288 | 459393 | 459543 | 459694 | 459845 | 459995 | 460146 | 460296 | 460447 | 460597 | 460748 | 151 |
| 289 | 460898 | 461048 | 461198 | 461348 | 461499 | 461649 | 461799 | 461949 | 462098 | 462248 | 150 |
| 290 | 462398 | 462548 | 462697 | 462847 | 462997 | 463146 | 463296 | 463445 | 463594 | 463744 | 150 |
| 291 | 463893 | 464042 | 464191 | 464341 | 464490 | 464639 | 464788 | 464936 | 465085 | 465234 | 149 |
| 292 | 465383 | 465532 | 465680 | 465829 | 465977 | 466126 | 466274 | 466423 | 466571 | 466719 | 149 |
| 293 | 466868 | 467016 | 467164 | 467312 | 467460 | 467608 | 467756 | 467904 | 468052 | 468200 | 148 |
| 294 | 468347 | 468495 | 468643 | 468790 | 468938 | 469085 | 469233 | 469380 | 469528 | 469675 | 148 |
| 295 | 469822 | 469969 | 470116 | 470263 | 470411 | 470558 | 470704 | 470851 | 470998 | 471145 | 147 |
| 296 | 471292 | 471438 | 471585 | 471732 | 471878 | 472025 | 472171 | 472318 | 472464 | 472610 | 147 |
| 297 | 472756 | 472903 | 473049 | 473195 | 473341 | 473487 | 473633 | 473779 | 473925 | 474071 | 146 |
| 298 | 474216 | 474362 | 474508 | 474653 | 474799 | 474944 | 475090 | 475235 | 475381 | 475526 | 146 |
| 299 | 475671 | 475816 | 475962 | 476107 | 476252 | 476397 | 476542 | 476687 | 476832 | 476977 | 145 |
| 300 | 477121 | 477266 | 477411 | 477555 | 477700 | 477845 | 477989 | 478133 | 478278 | 478422 | 145 |
| 301 | 478567 | 478711 | 478855 | 478999 | 479143 | 479287 | 479431 | 479575 | 479719 | 479863 | 144 |
| 302 | 480007 | 480151 | 480295 | 480438 | 480582 | 480725 | 480869 | 481012 | 481156 | 481299 | 144 |
| 303 | 481443 | 481586 | 481729 | 481872 | 482016 | 482159 | 482302 | 482445 | 482588 | 482731 | 143 |
| 304 | 482874 | 483016 | 483159 | 483302 | 483445 | 483587 | 483730 | 483873 | 484015 | 484157 | 143 |
| 305 | 484300 | 484442 | 484585 | 484727 | 484869 | 485011 | 485153 | 485295 | 485438 | 485580 | 142 |
| 306 | 485721 | 485863 | 486005 | 486147 | 486289 | 486431 | 486572 | 486714 | 486855 | 486997 | 142 |
| 307 | 487138 | 487280 | 487421 | 487563 | 487704 | 487845 | 487986 | 488128 | 488269 | 488410 | 141 |
| 308 | 488551 | 488692 | 488833 | 488974 | 489114 | 489255 | 489396 | 489537 | 489677 | 489818 | 141 |
| 309 | 489959 | 490099 | 490240 | 490380 | 490520 | 490661 | 490801 | 490941 | 491081 | 491222 | 140 |
| 310 | 491362 | 491502 | 491642 | 491782 | 491922 | 492062 | 492202 | 492341 | 492481 | 492621 | 140 |
| 311 | 492760 | 492900 | 493040 | 493179 | 493319 | 493458 | 493597 | 493737 | 493876 | 494015 | 139 |
| 312 | 494155 | 494294 | 494433 | 494572 | 494711 | 494850 | 494989 | 495128 | 495267 | 495406 | 139 |
| 313 | 495544 | 495683 | 495822 | 495960 | 496099 | 496238 | 496376 | 496515 | 496653 | 496791 | 139 |
| 314 | 496930 | 497068 | 497206 | 497344 | 497483 | 497621 | 497759 | 497897 | 498035 | 498173 | 138 |
| 315 | 498311 | 498448 | 498586 | 498724 | 498862 | 498999 | 499137 | 499275 | 499412 | 499550 | 138 |
| 316 | 499687 | 499825 | 499962 | 500099 | 500237 | 500374 | 500511 | 500648 | 500785 | 500922 | 137 |
| 317 | 501059 | 501196 | 501333 | 501470 | 501607 | 501744 | 501881 | 502017 | 502154 | 502291 | 137 |
| 318 | 502427 | 502564 | 502700 | 502837 | 502973 | 503109 | 503246 | 503382 | 503518 | 503655 | 136 |
| 319 | 503791 | 503927 | 504063 | 504199 | 504335 | 504471 | 504607 | 504743 | 504879 | 505014 | 136 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 320 | 505150 | 505286 | 505421 | 505557 | 505693 | 505828 | 505964 | 506099 | 506234 | 506370 | 136 |
| 321 | 506505 | 506640 | 506776 | 506911 | 507046 | 507181 | 507316 | 507451 | 507586 | 507721 | 135 |
| 322 | 507856 | 507991 | 508126 | 508260 | 508395 | 508530 | 508664 | 508799 | 508934 | 509068 | 135 |
| 323 | 509203 | 509337 | 509471 | 509606 | 509740 | 509874 | 510009 | 510143 | 510277 | 510411 | 134 |
| 324 | 510545 | 510679 | 510813 | 510947 | 511081 | 511215 | 511349 | 511482 | 511616 | 511750 | 134 |
| 325 | 511883 | 512017 | 512151 | 512284 | 512418 | 512551 | 512684 | 512818 | 512951 | 513084 | 133 |
| 326 | 513218 | 513351 | 513484 | 513617 | 513750 | 513883 | 514016 | 514149 | 514282 | 514415 | 133 |
| 327 | 514548 | 514681 | 514813 | 514946 | 515079 | 515211 | 515344 | 515476 | 515609 | 515741 | 133 |
| 328 | 515874 | 516006 | 516139 | 516271 | 516403 | 516535 | 516668 | 516800 | 516932 | 517064 | 132 |
| 329 | 517196 | 517328 | 517460 | 517592 | 517724 | 517855 | 517987 | 518119 | 518251 | 518382 | 132 |
| 330 | 518514 | 518646 | 518777 | 518909 | 519040 | 519172 | 519303 | 519434 | 519566 | 519697 | 131 |
| 331 | 519828 | 519959 | 520090 | 520221 | 520353 | 520484 | 520615 | 520746 | 520876 | 521007 | 131 |
| 332 | 521138 | 521269 | 521400 | 521530 | 521661 | 521792 | 521922 | 522053 | 522183 | 522314 | 131 |
| 333 | 522444 | 522575 | 522705 | 522835 | 522966 | 523096 | 323226 | 523356 | 523486 | 523616 | 130 |
| 334 | 523746 | 523876 | 524006 | 524136 | 524266 | 524396 | 524526 | 524656 | 524785 | 524915 | 130 |
| 335 | 525045 | 525174 | 525304 | 525434 | 525563 | 525693 | 525822 | 525951 | 526081 | 526210 | 129 |
| 336 | 526339 | 526469 | 526598 | 526727 | 526856 | 526985 | 527114 | 527243 | 527372 | 527501 | 129 |
| 337 | 527630 | 527759 | 527888 | 528016 | 528145 | 528274 | 528402 | 528531 | 528660 | 528788 | 129 |
| 338 | 528917 | 529045 | 529174 | 529302 | 529430 | 529559 | 529687 | 529815 | 529943 | 530072 | 128 |
| 339 | 530200 | 530328 | 530456 | 530584 | 530712 | 530840 | 530968 | 531096 | 531223 | 531351 | 128 |
| 340 | 531479 | 531607 | 531734 | 531862 | 531990 | 532117 | 532245 | 532372 | 532500 | 532627 | 128 |
| 341 | 532754 | 532882 | 533009 | 533136 | 533264 | 533391 | 533518 | 533645 | 533772 | 533899 | 127 |
| 342 | 534026 | 534153 | 534280 | 534407 | 534534 | 534661 | 534787 | 534914 | 535041 | 535168 | 127 |
| 343 | 535294 | 535421 | 535547 | 535674 | 535800 | 535927 | 536053 | 536180 | 536306 | 536432 | 126 |
| 344 | 536558 | 536685 | 536811 | 536937 | 537063 | 537189 | 537315 | 537441 | 537567 | 537693 | 126 |
| 345 | 537819 | 537945 | 538071 | 538197 | 538322 | 538448 | 538574 | 538699 | 538825 | 538951 | 126 |
| 346 | 539076 | 539202 | 539327 | 539453 | 539578 | 539703 | 539829 | 539954 | 540079 | 540204 | 125 |
| 347 | 540330 | 540455 | 540580 | 540705 | 540830 | 540955 | 541080 | 541205 | 541330 | 541454 | 125 |
| 348 | 541579 | 541704 | 541829 | 541954 | 542078 | 542203 | 542327 | 542452 | 542577 | 542701 | 125 |
| 349 | 542825 | 542950 | 543074 | 543199 | 543323 | 543447 | 543571 | 543696 | 543820 | 543944 | 124 |
| 350 | 544068 | 544192 | 544316 | 544440 | 544564 | 544688 | 544812 | 544936 | 545060 | 545183 | 124 |
| 351 | 545307 | 545431 | 545555 | 545678 | 545802 | 545925 | 546049 | 546172 | 546296 | 546419 | 124 |
| 352 | 546543 | 546666 | 546789 | 546913 | 547036 | 547159 | 547282 | 547406 | 547529 | 547652 | 123 |
| 353 | 547775 | 547898 | 548021 | 548144 | 548267 | 548389 | 548512 | 548635 | 548758 | 548881 | 123 |
| 354 | 549003 | 549126 | 549249 | 549371 | 549494 | 549616 | 549739 | 549861 | 549984 | 550106 | 123 |
| 355 | 550228 | 550351 | 550473 | 550595 | 550717 | 550840 | 550962 | 551084 | 551206 | 551328 | 122 |
| 356 | 551450 | 551572 | 551694 | 551816 | 551938 | 552060 | 552181 | 552303 | 552425 | 552547 | 122 |
| 357 | 552668 | 552790 | 552912 | 553033 | 553155 | 553276 | 553398 | 553519 | 553640 | 553762 | 121 |
| 358 | 553883 | 554004 | 554126 | 554247 | 554368 | 554489 | 554610 | 554731 | 554852 | 554974 | 121 |
| 359 | 555094 | 555215 | 555336 | 555457 | 555578 | 555699 | 555820 | 555940 | 556061 | 556182 | 121 |
| 360 | 556303 | 556423 | 556544 | 556664 | 556785 | 556905 | 557026 | 557146 | 557267 | 557387 | 120 |
| 361 | 557507 | 557628 | 557748 | 557868 | 557988 | 558108 | 558228 | 558349 | 558469 | 558589 | 120 |
| 362 | 558709 | 558829 | 558948 | 559068 | 559188 | 559308 | 559428 | 559548 | 559667 | 559787 | 120 |
| 363 | 559907 | 560026 | 560146 | 560265 | 560385 | 560504 | 560624 | 560743 | 560863 | 560982 | 119 |
| 364 | 561101 | 561221 | 561340 | 561459 | 561578 | 561698 | 561817 | 561936 | 562055 | 562174 | 119 |
| 365 | 562293 | 562412 | 562531 | 562650 | 562769 | 562887 | 563006 | 563125 | 563244 | 563362 | 119 |
| 366 | 563481 | 563600 | 563718 | 563837 | 563956 | 564074 | 564193 | 564311 | 564429 | 564548 | 119 |
| 367 | 564666 | 564784 | 564903 | 565021 | 565139 | 565257 | 565376 | 565494 | 565612 | 565730 | 118 |
| 368 | 565848 | 565966 | 566084 | 566202 | 566320 | 566438 | 566555 | 566673 | 566791 | 566909 | 118 |
| 369 | 567026 | 567144 | 567262 | 567379 | 567497 | 567614 | 567732 | 567850 | 567967 | 568084 | 118 |
| 370 | 568202 | 568319 | 568436 | 568554 | 568671 | 568788 | 568905 | 569023 | 569140 | 569257 | 117 |
| 371 | 569374 | 569491 | 569608 | 569725 | 569842 | 569959 | 570076 | 570193 | 570309 | 570426 | 117 |
| 372 | 570543 | 570660 | 570776 | 570893 | 571010 | 571126 | 571243 | 571359 | 571476 | 571592 | 117 |
| 373 | 571709 | 571825 | 571942 | 572058 | 572174 | 572291 | 572407 | 572523 | 572639 | 572756 | 116 |
| 374 | 572872 | 572988 | 573104 | 573220 | 573336 | 573452 | 573568 | 573684 | 573800 | 573915 | 116 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 375 | 574031 | 574147 | 574263 | 574379 | 574494 | 574610 | 574726 | 574841 | 574957 | 575072 | 116 |
| 376 | 575188 | 575303 | 575419 | 575534 | 575650 | 575765 | 575880 | 575996 | 576111 | 576226 | 115 |
| 377 | 576341 | 576457 | 576572 | 576687 | 576802 | 576917 | 577032 | 577147 | 577262 | 577377 | 115 |
| 378 | 577492 | 577607 | 577722 | 577836 | 577951 | 578066 | 578181 | 578295 | 578410 | 578525 | 115 |
| 379 | 578639 | 578754 | 578868 | 578983 | 579097 | 579212 | 579326 | 579441 | 579555 | 579669 | 114 |
| 380 | 579784 | 579898 | 580012 | 580126 | 580241 | 580355 | 580469 | 580583 | 580697 | 580811 | 114 |
| 381 | 580925 | 581039 | 581153 | 581267 | 581381 | 581495 | 581608 | 581722 | 581836 | 581950 | 114 |
| 382 | 582063 | 582177 | 582291 | 582404 | 582518 | 582631 | 582745 | 582859 | 582972 | 583085 | 114 |
| 383 | 583199 | 583312 | 583426 | 583539 | 583652 | 583765 | 583879 | 583992 | 584105 | 584218 | 113 |
| 384 | 584331 | 584444 | 584557 | 584670 | 584783 | 584896 | 585009 | 585122 | 585235 | 585348 | 113 |
| 385 | 585461 | 585574 | 585686 | 585799 | 585912 | 586024 | 586137 | 586250 | 586362 | 586475 | 113 |
| 386 | 586587 | 586700 | 586812 | 586925 | 587037 | 587150 | 587262 | 587374 | 587487 | 587599 | 112 |
| 387 | 587711 | 587823 | 587935 | 588048 | 588160 | 588272 | 588384 | 588496 | 588608 | 588720 | 112 |
| 388 | 588832 | 588944 | 589056 | 589167 | 589279 | 589391 | 589503 | 589615 | 589726 | 589838 | 112 |
| 389 | 589950 | 590061 | 590173 | 590284 | 590396 | 590508 | 590619 | 590730 | 590842 | 590953 | 112 |
| 390 | 591065 | 591176 | 591287 | 591399 | 591510 | 591621 | 591732 | 591843 | 591955 | 592066 | 111 |
| 391 | 592177 | 592288 | 592399 | 592510 | 592621 | 592732 | 592843 | 592954 | 593064 | 593175 | 111 |
| 392 | 593286 | 593397 | 593508 | 593618 | 593729 | 593840 | 593950 | 594061 | 594172 | 594282 | 111 |
| 393 | 594393 | 594503 | 594614 | 594724 | 594834 | 594945 | 595055 | 595165 | 595276 | 595386 | 110 |
| 394 | 595496 | 595606 | 595717 | 595827 | 595937 | 596047 | 596157 | 596267 | 596377 | 596487 | 110 |
| 395 | 596597 | 596707 | 596817 | 596927 | 597037 | 597147 | 597256 | 597366 | 597476 | 597586 | 110 |
| 396 | 597695 | 597805 | 597915 | 598024 | 598134 | 598243 | 598353 | 598462 | 598572 | 598681 | 110 |
| 397 | 598791 | 598900 | 599009 | 599119 | 599228 | 599337 | 599446 | 599556 | 599665 | 599774 | 109 |
| 398 | 599883 | 599992 | 600101 | 600210 | 600319 | 600428 | 600537 | 600646 | 600755 | 600864 | 109 |
| 399 | 600973 | 601082 | 601191 | 601299 | 601408 | 601517 | 601626 | 601734 | 601843 | 601951 | 109 |
| 400 | 602060 | 602169 | 602277 | 602386 | 602494 | 602603 | 602711 | 602819 | 602928 | 603036 | 108 |
| 401 | 603144 | 603253 | 603361 | 603469 | 603577 | 603686 | 603794 | 603902 | 604010 | 604118 | 108 |
| 402 | 604226 | 604334 | 604442 | 604550 | 604658 | 604766 | 604874 | 604982 | 605090 | 605197 | 108 |
| 403 | 605305 | 605413 | 605521 | 605628 | 605736 | 605844 | 605951 | 606059 | 606166 | 606274 | 108 |
| 404 | 606381 | 606489 | 606596 | 606704 | 606811 | 606919 | 607026 | 607133 | 607241 | 607348 | 107 |
| 405 | 607455 | 607562 | 607669 | 607777 | 607884 | 607991 | 608098 | 608205 | 608312 | 608419 | 107 |
| 406 | 608526 | 608633 | 608740 | 608847 | 608954 | 609061 | 609167 | 609274 | 609381 | 609488 | 107 |
| 407 | 609594 | 609701 | 609808 | 609914 | 610021 | 610128 | 610234 | 610341 | 610447 | 610554 | 107 |
| 408 | 610660 | 610767 | 610873 | 610979 | 611086 | 611192 | 611298 | 611405 | 611511 | 611617 | 106 |
| 409 | 611723 | 611830 | 611936 | 612042 | 612148 | 612254 | 612360 | 612466 | 612572 | 612678 | 106 |
| 410 | 612784 | 612890 | 612993 | 613102 | 613207 | 613313 | 613419 | 613525 | 613630 | 613736 | 106 |
| 411 | 613842 | 613948 | 614053 | 614159 | 614264 | 614370 | 614475 | 614581 | 614686 | 614792 | 106 |
| 412 | 614897 | 615003 | 615108 | 615213 | 615319 | 615424 | 615529 | 615635 | 615740 | 615845 | 105 |
| 413 | 615950 | 616055 | 616160 | 616265 | 616371 | 616476 | 616581 | 616686 | 616791 | 616895 | 105 |
| 414 | 617000 | 617105 | 617210 | 617315 | 617420 | 617525 | 617629 | 617734 | 617839 | 617943 | 105 |
| 415 | 618048 | 618153 | 618257 | 618362 | 618467 | 618571 | 618676 | 618780 | 618885 | 618989 | 105 |
| 416 | 619093 | 619198 | 619302 | 619406 | 619511 | 619615 | 619719 | 619824 | 619928 | 620032 | 104 |
| 417 | 620136 | 620240 | 620344 | 620448 | 620552 | 620657 | 620761 | 620865 | 620968 | 621072 | 104 |
| 418 | 621176 | 621280 | 621384 | 621488 | 621592 | 621696 | 621799 | 621903 | 622007 | 622110 | 104 |
| 419 | 622214 | 622318 | 622421 | 622525 | 622628 | 622732 | 622836 | 622939 | 623042 | 623146 | 104 |
| 420 | 623249 | 623353 | 623456 | 623559 | 623663 | 623766 | 623869 | 623973 | 624076 | 624179 | 103 |
| 421 | 624282 | 624385 | 624488 | 624592 | 624695 | 624798 | 624901 | 625004 | 625107 | 625210 | 103 |
| 422 | 625313 | 625415 | 625518 | 625621 | 625724 | 625827 | 625930 | 626032 | 626135 | 626238 | 103 |
| 423 | 626340 | 626443 | 626546 | 626648 | 626751 | 626853 | 626956 | 627059 | 627161 | 627263 | 103 |
| 424 | 627366 | 627468 | 627571 | 627673 | 627775 | 627878 | 627980 | 628082 | 628185 | 628287 | 102 |
| 425 | 628389 | 628491 | 628593 | 628695 | 628798 | 628900 | 629002 | 629104 | 629206 | 629308 | 102 |
| 426 | 629410 | 629512 | 629613 | 629715 | 629817 | 629919 | 630021 | 630123 | 630224 | 630326 | 102 |
| 427 | 630428 | 630530 | 630631 | 630733 | 630835 | 630936 | 631038 | 631139 | 631241 | 631342 | 102 |
| 428 | 631444 | 631545 | 631647 | 631748 | 631850 | 631951 | 632052 | 632154 | 632255 | 632356 | 101 |
| 429 | 632457 | 632559 | 632660 | 632761 | 632862 | 632963 | 633064 | 633165 | 633266 | 633367 | 101 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 430 | 633469 | 633569 | 633670 | 633771 | 633872 | 633973 | 634074 | 634175 | 634276 | 634377 | 101 |
| 431 | 634477 | 634578 | 634679 | 634780 | 634880 | 634981 | 635081 | 635182 | 635283 | 635383 | 101 |
| 432 | 635484 | 635584 | 635685 | 635785 | 635886 | 635986 | 636087 | 636187 | 636287 | 636388 | 100 |
| 433 | 636488 | 636588 | 636688 | 636789 | 636889 | 636989 | 637089 | 637189 | 637290 | 637390 | 100 |
| 434 | 637490 | 637590 | 637690 | 637790 | 637890 | 637990 | 638090 | 638190 | 638290 | 638389 | 100 |
| 435 | 638489 | 638589 | 638689 | 638789 | 638888 | 638988 | 639088 | 639188 | 639287 | 639387 | 100 |
| 436 | 639487 | 639586 | 639686 | 639785 | 639885 | 639984 | 640084 | 640183 | 640283 | 640382 | 99 |
| 437 | 640481 | 640581 | 640680 | 640780 | 640879 | 640978 | 641077 | 641177 | 641276 | 641375 | 99 |
| 438 | 641474 | 641573 | 641672 | 641772 | 641871 | 641970 | 642069 | 642168 | 642267 | 642366 | 99 |
| 439 | 642465 | 642563 | 642662 | 642761 | 642860 | 642959 | 643058 | 643157 | 643255 | 643354 | 99 |
| 440 | 643453 | 643551 | 643650 | 643749 | 643847 | 643946 | 644045 | 644143 | 644242 | 644340 | 98 |
| 441 | 644439 | 644537 | 644636 | 644734 | 644832 | 644931 | 645029 | 645127 | 645226 | 645324 | 98 |
| 442 | 645422 | 645521 | 645619 | 645717 | 645815 | 645913 | 646011 | 646110 | 646208 | 646306 | 98 |
| 443 | 646404 | 646502 | 646600 | 646698 | 646796 | 646894 | 646992 | 647089 | 647187 | 647285 | 98 |
| 444 | 647383 | 647481 | 647579 | 647676 | 647774 | 647872 | 647970 | 648067 | 648165 | 648262 | 98 |
| 445 | 648360 | 648458 | 648555 | 648653 | 648750 | 648848 | 648945 | 649043 | 649140 | 649238 | 97 |
| 446 | 649335 | 649432 | 649530 | 649627 | 649724 | 649822 | 649919 | 650016 | 650113 | 650210 | 97 |
| 447 | 650308 | 650405 | 650502 | 650599 | 650696 | 650793 | 650890 | 650987 | 651084 | 651181 | 97 |
| 448 | 651278 | 651375 | 651472 | 651569 | 651166 | 651762 | 651859 | 651956 | 652053 | 652150 | 97 |
| 449 | 652246 | 652343 | 652440 | 652536 | 652633 | 652730 | 652826 | 652923 | 653020 | 653116 | 97 |
| 450 | 653213 | 653309 | 653406 | 653502 | 653598 | 653695 | 653791 | 653888 | 653984 | 654080 | 96 |
| 451 | 654177 | 654273 | 654369 | 654465 | 654562 | 654658 | 654754 | 654850 | 654946 | 655042 | 96 |
| 452 | 655138 | 655235 | 655331 | 655427 | 655523 | 655619 | 655715 | 655811 | 655906 | 656002 | 96 |
| 453 | 656098 | 656194 | 656290 | 656386 | 656482 | 656577 | 656673 | 656769 | 656865 | 656960 | 96 |
| 454 | 657056 | 657152 | 657247 | 657343 | 657438 | 657534 | 657629 | 657725 | 657821 | 657916 | 96 |
| 455 | 658011 | 658107 | 658202 | 658298 | 658393 | 658488 | 658584 | 658679 | 658774 | 658870 | 95 |
| 456 | 658965 | 659060 | 659155 | 659251 | 659346 | 659441 | 659536 | 659631 | 659726 | 659821 | 95 |
| 457 | 659916 | 660011 | 660106 | 660201 | 660296 | 660391 | 660486 | 660581 | 660676 | 660771 | 95 |
| 458 | 660866 | 660960 | 661055 | 661150 | 661245 | 661339 | 661434 | 661529 | 661623 | 661718 | 95 |
| 459 | 661813 | 661907 | 662002 | 662096 | 662191 | 662286 | 662380 | 662475 | 662569 | 662663 | 95 |
| 460 | 662758 | 662852 | 662947 | 663041 | 663135 | 663230 | 663324 | 663418 | 663513 | 663607 | 94 |
| 461 | 663701 | 663795 | 663889 | 663984 | 664078 | 664172 | 664266 | 664360 | 664454 | 664548 | 94 |
| 462 | 664642 | 664736 | 664830 | 664924 | 665018 | 665112 | 665206 | 665300 | 665393 | 665487 | 94 |
| 463 | 665581 | 665675 | 665769 | 665862 | 665956 | 666050 | 666143 | 666237 | 666331 | 666424 | 94 |
| 464 | 666518 | 666612 | 666705 | 666799 | 666892 | 666986 | 667079 | 667173 | 667266 | 667360 | 94 |
| 465 | 667453 | 667546 | 667640 | 667733 | 667826 | 667920 | 668013 | 668106 | 668200 | 668293 | 93 |
| 466 | 668386 | 668479 | 668572 | 668665 | 668759 | 668852 | 668945 | 669038 | 669131 | 669224 | 93 |
| 467 | 669317 | 669410 | 669503 | 669596 | 669689 | 669782 | 669875 | 669967 | 670060 | 670153 | 93 |
| 468 | 670246 | 670339 | 670431 | 670524 | 670617 | 670710 | 670802 | 670895 | 670988 | 671080 | 93 |
| 469 | 671173 | 671265 | 671358 | 671451 | 671543 | 671636 | 671728 | 671821 | 671913 | 672005 | 93 |
| 470 | 672098 | 672190 | 672283 | 672375 | 672467 | 672560 | 672652 | 672744 | 672837 | 672929 | 92 |
| 471 | 673021 | 673113 | 673205 | 673297 | 673390 | 673482 | 673574 | 673666 | 673758 | 673850 | 92 |
| 472 | 673942 | 674034 | 674126 | 674218 | 674310 | 674402 | 674494 | 674586 | 674678 | 674769 | 92 |
| 473 | 674861 | 674953 | 675045 | 675137 | 675228 | 675320 | 675412 | 675503 | 675595 | 675687 | 92 |
| 474 | 675778 | 675870 | 675962 | 676053 | 676145 | 676236 | 676328 | 676419 | 676511 | 676602 | 92 |
| 475 | 676694 | 676785 | 676876 | 676968 | 677059 | 677151 | 677242 | 677333 | 677424 | 677516 | 91 |
| 476 | 677607 | 677698 | 677789 | 677881 | 677972 | 678063 | 678154 | 678245 | 678336 | 678427 | 91 |
| 477 | 678518 | 678609 | 678700 | 678791 | 678882 | 678973 | 679064 | 679155 | 679246 | 679337 | 91 |
| 478 | 679428 | 679519 | 679610 | 679700 | 679791 | 679882 | 679973 | 680063 | 680154 | 680245 | 91 |
| 479 | 680336 | 680426 | 680517 | 680607 | 680698 | 680789 | 680879 | 680970 | 681060 | 681151 | 91 |
| 480 | 681241 | 681332 | 681422 | 681513 | 681603 | 681693 | 681784 | 681874 | 681965 | 682055 | 90 |
| 481 | 682145 | 682235 | 682326 | 682416 | 682506 | 682596 | 682687 | 682777 | 682867 | 682957 | 90 |
| 482 | 683047 | 683137 | 683227 | 683317 | 683407 | 683497 | 683587 | 683677 | 683767 | 683857 | 90 |
| 483 | 683947 | 684037 | 684127 | 684217 | 684307 | 684397 | 684486 | 684576 | 684666 | 684756 | 90 |
| 484 | 684845 | 684935 | 685025 | 685115 | 685204 | 685294 | 685383 | 685473 | 685563 | 685652 | 90 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Dif |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 485 | 685742 | 685831 | 685921 | 686010 | 686100 | 686189 | 686279 | 686368 | 686458 | 686547 | 89 |
| 486 | 686636 | 686726 | 686815 | 686904 | 686994 | 687083 | 687172 | 687261 | 687351 | 687440 | 89 |
| 487 | 687529 | 687618 | 687707 | 687796 | 687886 | 687975 | 688064 | 688153 | 688242 | 688331 | 89 |
| 488 | 688420 | 688509 | 688598 | 688687 | 688776 | 688865 | 688954 | 689042 | 689131 | 689220 | 89 |
| 489 | 689309 | 689398 | 689486 | 689575 | 689664 | 689753 | 689841 | 689930 | 690019 | 690107 | 89 |
| 490 | 690196 | 690285 | 690373 | 690462 | 690551 | 690639 | 690728 | 690816 | 690905 | 690993 | 89 |
| 491 | 691082 | 691170 | 691258 | 691347 | 691435 | 691524 | 691612 | 691700 | 691789 | 691877 | 88 |
| 492 | 691965 | 692053 | 692142 | 692230 | 692318 | 692406 | 692494 | 692583 | 692671 | 692759 | 88 |
| 493 | 692847 | 692935 | 693023 | 693111 | 693199 | 693287 | 693375 | 693463 | 693551 | 693639 | 88 |
| 494 | 693727 | 693815 | 693903 | 693991 | 694079 | 694166 | 694254 | 694342 | 694430 | 694518 | 88 |
| 495 | 694605 | 694693 | 694781 | 694868 | 694956 | 695044 | 695131 | 695219 | 695307 | 695394 | 88 |
| 496 | 695482 | 695569 | 695657 | 695744 | 695832 | 695919 | 696007 | 696094 | 696182 | 696269 | 87 |
| 497 | 696356 | 696444 | 696531 | 696619 | 696706 | 696793 | 696880 | 696968 | 697055 | 697142 | 87 |
| 498 | 697229 | 697317 | 697404 | 697491 | 697578 | 697665 | 697752 | 697839 | 697926 | 698014 | 87 |
| 499 | 698101 | 698188 | 698275 | 698362 | 698449 | 698536 | 698622 | 698709 | 698796 | 698883 | 87 |
| 500 | 698970 | 699057 | 699144 | 699231 | 699317 | 699404 | 699491 | 699578 | 699664 | 699751 | 87 |
| 501 | 699838 | 699924 | 700011 | 700098 | 700184 | 700271 | 700358 | 700444 | 700531 | 700617 | 87 |
| 502 | 700704 | 700790 | 700877 | 700963 | 701050 | 701136 | 701223 | 701309 | 701395 | 701482 | 86 |
| 503 | 701568 | 701654 | 701741 | 701827 | 701913 | 702000 | 702086 | 702172 | 702258 | 702344 | 86 |
| 504 | 702431 | 702517 | 702603 | 702689 | 702775 | 702861 | 702947 | 703033 | 703119 | 703205 | 86 |
| 505 | 703291 | 703377 | 703463 | 703549 | 703635 | 703721 | 703807 | 703893 | 703979 | 704065 | 86 |
| 506 | 704151 | 704236 | 704322 | 704408 | 704494 | 704579 | 704665 | 704751 | 704837 | 704922 | 86 |
| 507 | 705008 | 705094 | 705179 | 705265 | 705351 | 705436 | 705522 | 705607 | 705693 | 705778 | 86 |
| 508 | 705864 | 705949 | 706035 | 706120 | 706206 | 706291 | 706376 | 706462 | 706547 | 706633 | 85 |
| 509 | 706718 | 706803 | 706888 | 706974 | 707059 | 707144 | 707229 | 707315 | 707400 | 707485 | 85 |
| 510 | 707570 | 707655 | 707741 | 707826 | 707911 | 707996 | 708081 | 708166 | 708251 | 708336 | 85 |
| 511 | 708421 | 708506 | 708591 | 708676 | 708761 | 708846 | 708931 | 709015 | 709100 | 709185 | 85 |
| 512 | 709270 | 709355 | 709440 | 709524 | 709609 | 709694 | 709779 | 709863 | 709948 | 710033 | 85 |
| 513 | 710117 | 710202 | 710287 | 710371 | 710456 | 710540 | 710625 | 710710 | 710794 | 710879 | 85 |
| 514 | 710963 | 711048 | 711132 | 711217 | 711301 | 711385 | 711470 | 711554 | 711639 | 711723 | 84 |
| 515 | 711807 | 711892 | 711976 | 712060 | 712144 | 712229 | 712313 | 712397 | 712481 | 712566 | 84 |
| 516 | 712650 | 712734 | 712818 | 712902 | 712986 | 713070 | 713154 | 713239 | 713323 | 713407 | 84 |
| 517 | 713491 | 713575 | 713659 | 713743 | 713826 | 713910 | 713994 | 714078 | 714162 | 714246 | 84 |
| 518 | 714330 | 714414 | 714497 | 714581 | 714665 | 714749 | 714833 | 714916 | 715000 | 715084 | 84 |
| 519 | 715167 | 715251 | 715335 | 715418 | 715502 | 715586 | 715669 | 715753 | 715836 | 715920 | 84 |
| 520 | 716003 | 716087 | 716170 | 716254 | 716337 | 716421 | 716504 | 716588 | 716671 | 716754 | 83 |
| 521 | 716838 | 716921 | 717004 | 717088 | 717171 | 717254 | 717338 | 717421 | 717504 | 717587 | 83 |
| 522 | 717671 | 717754 | 717837 | 717920 | 718003 | 718086 | 718169 | 718253 | 718336 | 718419 | 83 |
| 523 | 718502 | 718585 | 718668 | 718751 | 718834 | 718917 | 719000 | 719083 | 719166 | 719248 | 83 |
| 524 | 719331 | 719414 | 719497 | 719580 | 719663 | 719746 | 719828 | 719911 | 719994 | 720077 | 83 |
| 525 | 720159 | 720242 | 720325 | 720407 | 720490 | 720573 | 720655 | 720738 | 720821 | 720903 | 83 |
| 526 | 720986 | 721068 | 721151 | 721233 | 721316 | 721398 | 721481 | 721563 | 721646 | 721728 | 82 |
| 527 | 721811 | 721893 | 721975 | 722058 | 722140 | 722223 | 722305 | 722387 | 722469 | 722552 | 82 |
| 528 | 722634 | 722716 | 722798 | 722881 | 722963 | 723045 | 723127 | 723209 | 723291 | 723374 | 82 |
| 529 | 723456 | 723538 | 723620 | 723702 | 723784 | 723866 | 723948 | 724030 | 724112 | 724194 | 82 |
| 530 | 724276 | 724358 | 724440 | 724522 | 724604 | 724685 | 724767 | 724849 | 724931 | 725013 | 82 |
| 531 | 725095 | 725176 | 725258 | 725340 | 725422 | 725503 | 725585 | 725667 | 725748 | 725830 | 82 |
| 532 | 725912 | 725993 | 726075 | 726157 | 726238 | 726320 | 726401 | 726483 | 726564 | 726646 | 82 |
| 533 | 726727 | 726809 | 726890 | 726972 | 727053 | 727134 | 727216 | 727297 | 727379 | 727460 | 81 |
| 534 | 727541 | 727623 | 727704 | 727785 | 727866 | 727948 | 728029 | 728110 | 728191 | 728273 | 81 |
| 535 | 728354 | 728435 | 728516 | 728597 | 728678 | 728760 | 728841 | 728922 | 729003 | 729084 | 81 |
| 536 | 729165 | 729246 | 729327 | 729408 | 729489 | 729570 | 729651 | 729732 | 729813 | 729893 | 81 |
| 537 | 729974 | 730055 | 730136 | 730217 | 730298 | 730379 | 730459 | 730540 | 730621 | 730702 | 81 |
| 538 | 730782 | 730863 | 730944 | 731024 | 731105 | 731186 | 731266 | 731347 | 731428 | 731508 | 81 |
| 539 | 731589 | 731669 | 731750 | 731830 | 731911 | 731991 | 732072 | 732152 | 732233 | 732313 | 81 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 540 | 732394 | 732474 | 732555 | 732635 | 732715 | 732796 | 732876 | 732956 | 733037 | 733117 | 80 |
| 541 | 733197 | 733278 | 733358 | 733438 | 733518 | 733599 | 733679 | 733759 | 733839 | 733919 | 80 |
| 542 | 733999 | 734079 | 734160 | 734240 | 734320 | 734400 | 734480 | 734560 | 734640 | 734720 | 80 |
| 543 | 734800 | 734880 | 734960 | 735040 | 735120 | 735200 | 735279 | 735359 | 735439 | 735519 | 80 |
| 544 | 735599 | 735679 | 735759 | 735838 | 735918 | 735998 | 736078 | 736157 | 736237 | 736317 | 80 |
| 545 | 736397 | 736476 | 736556 | 736636 | 736715 | 736795 | 736874 | 736954 | 737034 | 737113 | 80 |
| 546 | 737193 | 737271 | 737352 | 737431 | 737511 | 737590 | 737670 | 737749 | 737829 | 737908 | 79 |
| 547 | 737987 | 738067 | 738146 | 738225 | 738305 | 738385 | 738463 | 738543 | 738622 | 738701 | 79 |
| 548 | 738781 | 738860 | 738939 | 739018 | 739097 | 739177 | 739256 | 739335 | 739414 | 739493 | 79 |
| 549 | 739572 | 739651 | 739731 | 739810 | 739889 | 739968 | 740047 | 740126 | 740205 | 740284 | 79 |
| 550 | 740363 | 740442 | 740521 | 740600 | 740678 | 740757 | 740836 | 740915 | 740994 | 741073 | 79 |
| 551 | 741152 | 741230 | 741309 | 741388 | 741467 | 741546 | 741624 | 741703 | 741782 | 741860 | 79 |
| 552 | 741939 | 742018 | 742096 | 742175 | 742254 | 742332 | 742411 | 742490 | 742568 | 742647 | 79 |
| 553 | 742725 | 742804 | 742882 | 742961 | 743039 | 743118 | 743196 | 743275 | 743353 | 743431 | 78 |
| 554 | 743510 | 743588 | 743667 | 743745 | 743823 | 743902 | 743980 | 744058 | 744137 | 744215 | 78 |
| 555 | 744293 | 744371 | 744450 | 744528 | 744606 | 744684 | 744762 | 744840 | 744919 | 744997 | 78 |
| 556 | 745075 | 745153 | 745231 | 745309 | 745387 | 745465 | 745543 | 745621 | 745699 | 745777 | 78 |
| 557 | 745855 | 745933 | 746011 | 746089 | 746167 | 746245 | 746323 | 746401 | 746479 | 746556 | 78 |
| 558 | 746634 | 746712 | 746790 | 746868 | 746945 | 747023 | 747101 | 747179 | 747256 | 747334 | 78 |
| 559 | 747412 | 747490 | 747567 | 747645 | 747723 | 747800 | 747878 | 747955 | 748033 | 748111 | 78 |
| 560 | 748188 | 748266 | 748343 | 748421 | 748498 | 748576 | 748653 | 748731 | 748808 | 748885 | 77 |
| 561 | 748963 | 749040 | 749118 | 749195 | 749272 | 749350 | 749427 | 749504 | 749582 | 749659 | 77 |
| 562 | 749736 | 749814 | 749891 | 749968 | 750045 | 750123 | 750200 | 750277 | 750354 | 750431 | 77 |
| 563 | 750508 | 750586 | 750663 | 750740 | 750817 | 750894 | 750971 | 751048 | 751125 | 751202 | 77 |
| 564 | 751279 | 751356 | 751433 | 751510 | 751587 | 751664 | 751741 | 751818 | 751895 | 751972 | 77 |
| 565 | 752048 | 752125 | 752202 | 752279 | 752356 | 752433 | 752509 | 752586 | 752663 | 752740 | 77 |
| 566 | 752816 | 752893 | 752970 | 753047 | 753123 | 753200 | 753277 | 753353 | 753430 | 753507 | 77 |
| 567 | 753583 | 753660 | 753736 | 753813 | 753889 | 753966 | 754042 | 754119 | 754195 | 754272 | 77 |
| 568 | 754348 | 754425 | 754501 | 754578 | 754654 | 754731 | 754807 | 754883 | 754960 | 755036 | 76 |
| 569 | 755112 | 755189 | 755265 | 755341 | 755418 | 755494 | 755570 | 755646 | 755722 | 755799 | 76 |
| 570 | 755875 | 755951 | 756027 | 756103 | 756180 | 756256 | 756332 | 756408 | 756484 | 756560 | 76 |
| 571 | 756636 | 756712 | 756788 | 756864 | 756940 | 757016 | 757092 | 757168 | 757244 | 757320 | 76 |
| 572 | 757396 | 757472 | 757548 | 757624 | 757700 | 757776 | 757851 | 757927 | 758003 | 758079 | 76 |
| 573 | 758155 | 758230 | 758306 | 758382 | 758458 | 758533 | 758609 | 758685 | 758761 | 758836 | 76 |
| 574 | 758912 | 758988 | 759063 | 759139 | 759214 | 759290 | 759366 | 759441 | 759517 | 759592 | 76 |
| 575 | 759668 | 759743 | 759819 | 759894 | 759970 | 760045 | 760121 | 760196 | 760272 | 760347 | 75 |
| 576 | 760423 | 760498 | 760573 | 760649 | 760724 | 760799 | 760875 | 760950 | 761025 | 761101 | 75 |
| 577 | 761176 | 761251 | 761326 | 761402 | 761477 | 761552 | 761627 | 761702 | 761778 | 761853 | 75 |
| 578 | 761928 | 762003 | 762078 | 762153 | 762228 | 762303 | 762378 | 762454 | 762529 | 762604 | 75 |
| 579 | 762679 | 762754 | 762829 | 762904 | 762979 | 763053 | 763128 | 763203 | 763278 | 763353 | 75 |
| 580 | 763428 | 763503 | 763578 | 763653 | 763727 | 763802 | 763877 | 763952 | 764027 | 764101 | 75 |
| 581 | 764176 | 764251 | 764326 | 764400 | 764475 | 764550 | 764624 | 764699 | 764774 | 764848 | 75 |
| 582 | 764923 | 764998 | 765072 | 765147 | 765221 | 765296 | 765371 | 765445 | 765520 | 765594 | 75 |
| 583 | 765669 | 765743 | 765818 | 765892 | 765966 | 766041 | 766115 | 766190 | 766264 | 766339 | 74 |
| 584 | 766413 | 766487 | 766562 | 766636 | 766710 | 766785 | 766859 | 766933 | 767007 | 767082 | 74 |
| 585 | 767156 | 767230 | 767304 | 767379 | 767453 | 767527 | 767601 | 767675 | 767749 | 767824 | 74 |
| 586 | 767898 | 767972 | 768046 | 768120 | 768194 | 768268 | 768342 | 768416 | 768490 | 768564 | 74 |
| 587 | 768638 | 768712 | 768786 | 768860 | 768934 | 769008 | 769082 | 769156 | 769230 | 769304 | 74 |
| 588 | 769377 | 769451 | 769525 | 769599 | 769673 | 769747 | 769820 | 769894 | 769968 | 770042 | 74 |
| 589 | 770115 | 770189 | 770263 | 770336 | 770410 | 770484 | 770558 | 770631 | 770705 | 770778 | 74 |
| 590 | 770852 | 770926 | 770999 | 771073 | 771146 | 771220 | 771293 | 771367 | 771441 | 771514 | 74 |
| 591 | 771588 | 771661 | 771734 | 771808 | 771881 | 771955 | 772028 | 772102 | 772175 | 772248 | 73 |
| 592 | 772322 | 772395 | 772468 | 772542 | 772615 | 772688 | 772762 | 772835 | 772908 | 772982 | 73 |
| 593 | 773055 | 773128 | 773201 | 773274 | 773348 | 773421 | 773494 | 773567 | 773640 | 773713 | 73 |
| 594 | 773786 | 773860 | 773933 | 774006 | 774079 | 774152 | 774225 | 774298 | 774371 | 774444 | 73 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 595 | 774517 | 774590 | 774663 | 774736 | 774809 | 774882 | 774955 | 775028 | 775101 | 775173 | 73 |
| 596 | 775246 | 775319 | 775392 | 775465 | 775538 | 775610 | 775683 | 775756 | 775829 | 775902 | 73 |
| 597 | 775974 | 776047 | 776120 | 776193 | 776265 | 776338 | 776411 | 776483 | 776556 | 776629 | 73 |
| 598 | 776701 | 776774 | 776846 | 776919 | 776992 | 777064 | 777137 | 777209 | 777282 | 777354 | 73 |
| 599 | 777427 | 777499 | 777572 | 777644 | 777717 | 777789 | 777862 | 777934 | 778007 | 778079 | 73 |
| 600 | 778151 | 778224 | 778296 | 778368 | 778441 | 778513 | 778585 | 778658 | 778730 | 778802 | 72 |
| 601 | 778875 | 778947 | 779019 | 779091 | 779163 | 779236 | 779308 | 779380 | 779452 | 779524 | 72 |
| 602 | 779597 | 779669 | 779741 | 779813 | 779885 | 779957 | 780029 | 780101 | 780173 | 780245 | 72 |
| 603 | 780317 | 780389 | 780461 | 780533 | 780605 | 780677 | 780749 | 780821 | 780893 | 780965 | 72 |
| 604 | 781037 | 781109 | 781181 | 781253 | 781325 | 781396 | 781468 | 781540 | 781612 | 781684 | 72 |
| 605 | 781755 | 781827 | 781899 | 781971 | 782042 | 782114 | 782186 | 782258 | 782329 | 782401 | 72 |
| 606 | 782473 | 782544 | 782616 | 782688 | 782759 | 782831 | 782902 | 782974 | 783046 | 783117 | 72 |
| 607 | 783189 | 783260 | 783332 | 783403 | 783475 | 783546 | 783618 | 783689 | 783761 | 783832 | 71 |
| 608 | 783904 | 783975 | 784046 | 784118 | 784189 | 784261 | 784332 | 784403 | 784475 | 784546 | 71 |
| 609 | 784617 | 784689 | 784760 | 784831 | 784902 | 784974 | 785045 | 785116 | 785187 | 785259 | 71 |
| 610 | 785330 | 785401 | 785472 | 785543 | 785615 | 785686 | 785757 | 785828 | 785899 | 785970 | 71 |
| 611 | 786041 | 786112 | 786183 | 786254 | 786325 | 786397 | 786468 | 786539 | 786610 | 786681 | 71 |
| 612 | 786751 | 786822 | 786893 | 786964 | 787035 | 787106 | 787177 | 787248 | 787319 | 787390 | 71 |
| 613 | 787461 | 787531 | 787602 | 787673 | 787744 | 787815 | 787885 | 787956 | 788027 | 788098 | 71 |
| 614 | 788168 | 788239 | 788310 | 788381 | 788451 | 788522 | 788593 | 788663 | 788734 | 788805 | 71 |
| 615 | 788875 | 788946 | 789016 | 789087 | 789158 | 789228 | 789299 | 789369 | 789440 | 789510 | 71 |
| 616 | 789581 | 789651 | 789722 | 789792 | 789863 | 789933 | 790004 | 790074 | 790144 | 790215 | 70 |
| 617 | 790285 | 790356 | 790426 | 790496 | 790567 | 790637 | 790707 | 790778 | 790848 | 790918 | 70 |
| 618 | 790989 | 791059 | 791129 | 791199 | 791270 | 791340 | 791410 | 791480 | 791550 | 791621 | 70 |
| 619 | 791691 | 791761 | 791831 | 791901 | 791971 | 792041 | 792111 | 792182 | 792252 | 792322 | 70 |
| 620 | 792392 | 792462 | 792532 | 792602 | 792672 | 792742 | 792812 | 792882 | 792952 | 793022 | 70 |
| 621 | 793092 | 793162 | 793231 | 793301 | 793371 | 793441 | 793511 | 793581 | 793651 | 793721 | 70 |
| 622 | 793790 | 793860 | 793930 | 794000 | 794070 | 794139 | 794209 | 794279 | 794349 | 794418 | 70 |
| 623 | 794488 | 794558 | 794627 | 794697 | 794767 | 794837 | 794906 | 794976 | 795045 | 795115 | 70 |
| 624 | 795185 | 795254 | 795324 | 795393 | 795463 | 795532 | 795602 | 795672 | 795741 | 795811 | 70 |
| 625 | 795880 | 795950 | 796019 | 796088 | 796158 | 796227 | 796297 | 796366 | 796436 | 796505 | 69 |
| 626 | 796574 | 796644 | 796713 | 796782 | 796852 | 796921 | 796990 | 797060 | 797129 | 797198 | 69 |
| 627 | 797268 | 797337 | 797406 | 797475 | 797545 | 797614 | 797683 | 797752 | 797821 | 797891 | 69 |
| 628 | 797960 | 798029 | 798098 | 798167 | 798236 | 798305 | 798374 | 798444 | 798513 | 798582 | 69 |
| 629 | 798651 | 798720 | 798789 | 798858 | 798927 | 798996 | 799065 | 799134 | 799203 | 799272 | 69 |
| 630 | 799341 | 799410 | 799478 | 799547 | 799616 | 799685 | 799754 | 799823 | 799892 | 799961 | 69 |
| 631 | 800029 | 800098 | 800167 | 800236 | 800305 | 800373 | 800442 | 800511 | 800580 | 800648 | 69 |
| 632 | 800717 | 800786 | 800855 | 800923 | 800992 | 801061 | 801129 | 801198 | 801267 | 801335 | 69 |
| 633 | 801404 | 801472 | 801541 | 801610 | 801678 | 801747 | 801815 | 801884 | 801952 | 802021 | 69 |
| 634 | 802089 | 802158 | 802226 | 802295 | 802363 | 802432 | 802500 | 802569 | 802637 | 802705 | 68 |
| 635 | 802774 | 802842 | 802911 | 802979 | 803047 | 803116 | 803184 | 803252 | 803321 | 803389 | 68 |
| 636 | 803457 | 803525 | 803594 | 803662 | 803730 | 803798 | 803867 | 803935 | 804003 | 804071 | 68 |
| 637 | 804139 | 804208 | 804276 | 804344 | 804412 | 804480 | 804548 | 804616 | 804685 | 804753 | 68 |
| 638 | 804821 | 804889 | 804957 | 805025 | 805093 | 805161 | 805229 | 805297 | 805365 | 805433 | 68 |
| 639 | 805501 | 805569 | 805637 | 805705 | 805773 | 805841 | 805909 | 805976 | 806044 | 806112 | 68 |
| 640 | 806180 | 806248 | 806316 | 806384 | 806451 | 806519 | 806587 | 806655 | 806723 | 806790 | 68 |
| 641 | 806858 | 806926 | 806994 | 807061 | 807129 | 807197 | 807264 | 807332 | 807400 | 807467 | 68 |
| 642 | 807535 | 807603 | 807670 | 807738 | 807806 | 807873 | 807941 | 808008 | 808076 | 808143 | 68 |
| 643 | 808211 | 808279 | 808346 | 808414 | 808481 | 808549 | 808616 | 808684 | 808751 | 808818 | 68 |
| 644 | 808886 | 808953 | 809021 | 809088 | 809156 | 809223 | 809290 | 809358 | 809425 | 809492 | 67 |
| 645 | 809560 | 809627 | 809694 | 809762 | 809829 | 809896 | 809964 | 810031 | 810098 | 810165 | 67 |
| 646 | 810233 | 810300 | 810367 | 810434 | 810501 | 810569 | 810636 | 810703 | 810770 | 810837 | 67 |
| 647 | 810904 | 810971 | 811039 | 811106 | 811173 | 811240 | 811307 | 811374 | 811441 | 811508 | 67 |
| 648 | 811575 | 811642 | 811709 | 811776 | 811843 | 811910 | 811977 | 812044 | 812111 | 812178 | 67 |
| 649 | 812245 | 812312 | 812379 | 812445 | 812512 | 812579 | 812646 | 812713 | 812780 | 812847 | 67 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 650 | 812913 | 812980 | 813047 | 813114 | 813181 | 813247 | 813314 | 813381 | 813448 | 813514 | 67 |
| 651 | 813581 | 813648 | 813714 | 813781 | 813848 | 813914 | 813981 | 814048 | 814114 | 814181 | 67 |
| 652 | 814248 | 814314 | 814381 | 814447 | 814514 | 814581 | 814647 | 814714 | 814780 | 814847 | 67 |
| 653 | 814913 | 814980 | 815046 | 815113 | 815179 | 815246 | 815312 | 815379 | 815445 | 815511 | 66 |
| 654 | 815578 | 815644 | 815711 | 815777 | 815843 | 815910 | 815976 | 816042 | 816109 | 816175 | 66 |
| 655 | 816241 | 816308 | 816374 | 816440 | 816506 | 816573 | 816639 | 816705 | 816771 | 816838 | 66 |
| 656 | 816904 | 816970 | 817036 | 817102 | 817169 | 817235 | 817301 | 817367 | 817433 | 817499 | 66 |
| 657 | 817565 | 817632 | 817698 | 817764 | 817830 | 817896 | 817962 | 818028 | 818094 | 818160 | 66 |
| 658 | 818226 | 818292 | 818358 | 818424 | 818490 | 818556 | 818622 | 818688 | 818754 | 818820 | 66 |
| 659 | 818885 | 818951 | 819017 | 819083 | 819149 | 819215 | 819281 | 819347 | 819412 | 819478 | 66 |
| 660 | 819544 | 819610 | 819676 | 819741 | 819807 | 819873 | 819939 | 820004 | 820070 | 820136 | 66 |
| 661 | 820202 | 820267 | 820333 | 820399 | 820464 | 820530 | 820596 | 820661 | 820727 | 820792 | 66 |
| 662 | 820858 | 820924 | 820989 | 821055 | 821120 | 821186 | 821251 | 821317 | 821383 | 821448 | 66 |
| 663 | 821514 | 821579 | 821645 | 821710 | 821776 | 821841 | 821906 | 821972 | 822037 | 822103 | 66 |
| 664 | 822168 | 822234 | 822299 | 822364 | 822430 | 822495 | 822560 | 822626 | 822691 | 822756 | 65 |
| 665 | 822822 | 822887 | 822952 | 823018 | 823083 | 823148 | 823213 | 823279 | 823344 | 823409 | 65 |
| 666 | 823474 | 823539 | 823605 | 823670 | 823735 | 823800 | 823865 | 823931 | 823996 | 824061 | 65 |
| 667 | 824126 | 824191 | 824256 | 824321 | 824386 | 824451 | 824516 | 824581 | 824646 | 824711 | 65 |
| 668 | 824777 | 824842 | 824907 | 824972 | 825036 | 825101 | 825166 | 825231 | 825296 | 825361 | 65 |
| 669 | 825426 | 825491 | 825556 | 825621 | 825686 | 825751 | 825815 | 825880 | 825945 | 826010 | 65 |
| 670 | 826075 | 826140 | 826204 | 826269 | 826334 | 826399 | 826464 | 826528 | 826593 | 826658 | 65 |
| 671 | 826723 | 826787 | 826852 | 826917 | 826981 | 827046 | 827111 | 827175 | 827240 | 827305 | 65 |
| 672 | 827369 | 827434 | 827499 | 827563 | 827628 | 827692 | 827757 | 827821 | 827886 | 827951 | 65 |
| 673 | 828015 | 828080 | 828144 | 828209 | 828273 | 828338 | 828402 | 828467 | 828531 | 828596 | 64 |
| 674 | 828660 | 828724 | 828789 | 828853 | 828918 | 828982 | 829046 | 829111 | 829175 | 829239 | 64 |
| 675 | 829304 | 829368 | 829432 | 829497 | 829561 | 829625 | 829690 | 829754 | 829818 | 829882 | 64 |
| 676 | 829947 | 830011 | 830075 | 830139 | 830204 | 830268 | 830332 | 830396 | 830460 | 830525 | 64 |
| 677 | 830589 | 830653 | 830717 | 830781 | 830845 | 830909 | 830973 | 831038 | 831102 | 831166 | 64 |
| 678 | 831230 | 831294 | 831358 | 831422 | 831486 | 831550 | 831614 | 831678 | 831742 | 831806 | 64 |
| 679 | 831870 | 831934 | 831998 | 832062 | 832126 | 832190 | 832253 | 832317 | 832381 | 832445 | 64 |
| 680 | 832509 | 832573 | 832637 | 832701 | 832764 | 832828 | 832892 | 832956 | 833020 | 833083 | 64 |
| 681 | 833147 | 833211 | 833275 | 833338 | 833402 | 833466 | 833530 | 833593 | 833657 | 833721 | 64 |
| 682 | 833784 | 833848 | 833912 | 833975 | 834039 | 834103 | 834166 | 834230 | 834294 | 834357 | 64 |
| 683 | 834421 | 834484 | 834548 | 834611 | 834675 | 834739 | 834802 | 834866 | 834929 | 834993 | 64 |
| 684 | 835056 | 835120 | 835183 | 835247 | 835310 | 835374 | 835437 | 835500 | 835564 | 835627 | 63 |
| 685 | 835691 | 835754 | 835817 | 835881 | 835944 | 836008 | 836071 | 836134 | 836198 | 836261 | 63 |
| 686 | 836324 | 836387 | 836451 | 836514 | 836577 | 836641 | 836704 | 836767 | 836830 | 836894 | 63 |
| 687 | 836957 | 837020 | 837083 | 837146 | 837210 | 837273 | 837336 | 837399 | 837462 | 837525 | 63 |
| 688 | 837588 | 837652 | 837715 | 837778 | 837841 | 837904 | 837967 | 838030 | 838093 | 838156 | 63 |
| 689 | 838219 | 838282 | 838345 | 838408 | 838471 | 838534 | 838597 | 838660 | 838723 | 838786 | 63 |
| 690 | 838849 | 838912 | 838975 | 839038 | 839101 | 839164 | 839227 | 839290 | 839352 | 839415 | 63 |
| 691 | 839478 | 839541 | 839604 | 839667 | 839729 | 839792 | 839855 | 839918 | 839981 | 840043 | 63 |
| 692 | 840106 | 840169 | 840232 | 840294 | 840357 | 840420 | 840483 | 840545 | 840608 | 840671 | 63 |
| 693 | 840733 | 840796 | 840859 | 840921 | 840984 | 841047 | 841109 | 841172 | 841234 | 841297 | 63 |
| 694 | 841360 | 841422 | 841485 | 841547 | 841610 | 841672 | 841735 | 841797 | 841860 | 841922 | 63 |
| 695 | 841985 | 842047 | 842110 | 842172 | 842235 | 842297 | 842360 | 842422 | 842484 | 842547 | 62 |
| 696 | 842609 | 842672 | 842734 | 842796 | 842859 | 842921 | 842984 | 843046 | 843108 | 843171 | 62 |
| 697 | 843233 | 843295 | 843357 | 843420 | 843482 | 843544 | 843607 | 843669 | 843731 | 843793 | 62 |
| 698 | 843855 | 843918 | 843980 | 844042 | 844104 | 844166 | 844229 | 844291 | 844353 | 844415 | 62 |
| 699 | 844477 | 844539 | 844601 | 844664 | 844726 | 844788 | 844850 | 844912 | 844974 | 845036 | 62 |
| 700 | 845098 | 845160 | 845222 | 845284 | 845346 | 845408 | 845470 | 845532 | 845594 | 845656 | 62 |
| 701 | 845718 | 845780 | 845842 | 845904 | 845966 | 846028 | 846090 | 846152 | 846213 | 846275 | 62 |
| 702 | 846337 | 846399 | 846461 | 846523 | 846585 | 846646 | 846708 | 846770 | 846832 | 846894 | 62 |
| 703 | 846955 | 847017 | 847079 | 847141 | 847202 | 847264 | 847326 | 847388 | 847449 | 847511 | 62 |
| 704 | 847573 | 847634 | 847696 | 847758 | 847819 | 847881 | 847943 | 848004 | 848066 | 848128 | 62 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 705 | 848189 | 848251 | 848312 | 848374 | 848436 | 848497 | 848559 | 848620 | 848682 | 848743 | 62 |
| 706 | 848805 | 848866 | 848928 | 848989 | 849051 | 849112 | 849174 | 849235 | 849297 | 849358 | 61 |
| 707 | 849419 | 849481 | 849542 | 849604 | 849665 | 849726 | 849788 | 849849 | 849911 | 849972 | 61 |
| 708 | 850033 | 850095 | 850156 | 850217 | 850279 | 850340 | 850401 | 850462 | 850524 | 850585 | 61 |
| 709 | 850646 | 850708 | 850769 | 850830 | 850891 | 850952 | 851014 | 851075 | 851136 | 851197 | 61 |
| 710 | 851258 | 851320 | 851381 | 851442 | 851503 | 851564 | 851625 | 851686 | 851747 | 851809 | 61 |
| 711 | 851870 | 851931 | 851992 | 852053 | 852114 | 852175 | 852236 | 852297 | 852358 | 852419 | 61 |
| 712 | 852480 | 852541 | 852602 | 852663 | 852724 | 852785 | 852846 | 852907 | 852968 | 853029 | 61 |
| 713 | 853090 | 853150 | 853211 | 853272 | 853333 | 853394 | 853455 | 853516 | 853577 | 853637 | 61 |
| 714 | 853698 | 853759 | 853820 | 853881 | 853941 | 854002 | 854063 | 854124 | 854185 | 854245 | 61 |
| 715 | 854306 | 854367 | 854428 | 854488 | 854549 | 854610 | 854670 | 854731 | 854792 | 854852 | 61 |
| 716 | 854913 | 854974 | 855034 | 855095 | 855156 | 855216 | 855277 | 855337 | 855398 | 855459 | 61 |
| 717 | 855519 | 855580 | 855640 | 855701 | 855761 | 855822 | 855882 | 855943 | 856004 | 856064 | 61 |
| 718 | 856124 | 856185 | 856245 | 856306 | 856366 | 856427 | 856487 | 856548 | 856608 | 856669 | 60 |
| 719 | 856729 | 856789 | 856850 | 856910 | 856970 | 857031 | 857091 | 857152 | 857212 | 857272 | 60 |
| 720 | 857333 | 857393 | 857453 | 857513 | 857574 | 857634 | 857694 | 857755 | 857815 | 857875 | 60 |
| 721 | 857935 | 857996 | 858056 | 858116 | 858176 | 858236 | 858297 | 858357 | 858417 | 858477 | 60 |
| 722 | 858537 | 858597 | 858658 | 858718 | 858778 | 858838 | 858898 | 858958 | 859018 | 859078 | 60 |
| 723 | 859138 | 859198 | 859258 | 859319 | 859379 | 859439 | 859499 | 859559 | 859619 | 859679 | 60 |
| 724 | 859739 | 859799 | 859859 | 859919 | 859978 | 860038 | 860098 | 860158 | 860218 | 860278 | 60 |
| 725 | 860338 | 860398 | 860458 | 860518 | 860578 | 860637 | 860697 | 860757 | 860817 | 860877 | 60 |
| 726 | 860937 | 860996 | 861056 | 861116 | 861176 | 861236 | 861295 | 861355 | 861415 | 861475 | 60 |
| 727 | 861534 | 861594 | 861654 | 861714 | 861773 | 861833 | 861893 | 861952 | 862012 | 862072 | 60 |
| 728 | 862131 | 862191 | 862251 | 862310 | 862370 | 862430 | 862489 | 862549 | 862608 | 862668 | 60 |
| 729 | 862728 | 862787 | 862847 | 862906 | 862966 | 863025 | 863085 | 863144 | 863204 | 863263 | 60 |
| 730 | 863323 | 863382 | 863442 | 863501 | 863561 | 863620 | 863680 | 863739 | 863799 | 863858 | 59 |
| 731 | 863917 | 863977 | 864036 | 864096 | 864155 | 864214 | 864274 | 864333 | 864392 | 864452 | 59 |
| 732 | 864511 | 864570 | 864630 | 864689 | 864748 | 864808 | 864867 | 864926 | 864986 | 865045 | 59 |
| 733 | 865104 | 865163 | 865223 | 865282 | 865341 | 865400 | 865459 | 865519 | 865578 | 865637 | 59 |
| 734 | 865696 | 865755 | 865814 | 865874 | 865933 | 865992 | 866051 | 866110 | 866169 | 866228 | 59 |
| 735 | 866287 | 866346 | 866406 | 866465 | 866524 | 866583 | 866642 | 866701 | 866760 | 866819 | 59 |
| 736 | 866878 | 866937 | 866996 | 867055 | 867114 | 867173 | 867232 | 867291 | 867350 | 867409 | 59 |
| 737 | 867468 | 867526 | 867585 | 867644 | 867703 | 867762 | 867821 | 867880 | 867939 | 867998 | 59 |
| 738 | 868056 | 868115 | 868174 | 868233 | 868292 | 868351 | 868409 | 868468 | 868527 | 868586 | 59 |
| 739 | 868644 | 868703 | 868762 | 868821 | 868879 | 868938 | 868997 | 869056 | 869114 | 869173 | 59 |
| 740 | 869232 | 869290 | 869349 | 869408 | 869466 | 869525 | 869584 | 869642 | 869701 | 869760 | 59 |
| 741 | 869818 | 869877 | 869935 | 869994 | 870053 | 870111 | 870170 | 870228 | 870287 | 870345 | 59 |
| 742 | 870404 | 870462 | 870521 | 870580 | 870638 | 870697 | 870755 | 870813 | 870872 | 870930 | 58 |
| 743 | 870989 | 871047 | 871106 | 871164 | 871223 | 871281 | 871339 | 871398 | 871456 | 871515 | 58 |
| 744 | 871573 | 871631 | 871690 | 871748 | 871806 | 871865 | 871923 | 871981 | 872040 | 872098 | 58 |
| 745 | 872156 | 872215 | 872273 | 872331 | 872389 | 872448 | 872506 | 872564 | 872622 | 872681 | 58 |
| 746 | 872739 | 872797 | 872855 | 872913 | 872972 | 873030 | 873088 | 873146 | 873204 | 873263 | 58 |
| 747 | 873321 | 873379 | 873437 | 873495 | 873553 | 873611 | 873669 | 873727 | 873786 | 873844 | 58 |
| 748 | 873902 | 873960 | 874018 | 874076 | 874134 | 874192 | 874250 | 874308 | 874366 | 874424 | 58 |
| 749 | 874482 | 874540 | 874598 | 874656 | 874714 | 874772 | 874830 | 874888 | 874945 | 875003 | 58 |
| 750 | 875061 | 875119 | 875177 | 875235 | 875293 | 875351 | 875409 | 875466 | 875524 | 875582 | 58 |
| 751 | 875640 | 875698 | 875756 | 875813 | 875871 | 875929 | 875987 | 876045 | 876102 | 876160 | 58 |
| 752 | 876218 | 876276 | 876333 | 876391 | 876449 | 876507 | 876564 | 876622 | 876680 | 876737 | 58 |
| 753 | 876795 | 876853 | 876910 | 876968 | 877026 | 877083 | 877141 | 877199 | 877256 | 877314 | 58 |
| 754 | 877371 | 877429 | 877487 | 877544 | 877602 | 877659 | 877717 | 877774 | 877832 | 877889 | 58 |
| 755 | 877947 | 878005 | 878062 | 878120 | 878177 | 878235 | 878292 | 878349 | 878407 | 878464 | 57 |
| 756 | 878522 | 878579 | 878637 | 878694 | 878752 | 878809 | 878866 | 878924 | 878981 | 879039 | 57 |
| 757 | 879096 | 879153 | 879211 | 879268 | 879325 | 879383 | 879440 | 879497 | 879555 | 879612 | 57 |
| 758 | 879669 | 879727 | 879784 | 879841 | 879898 | 879956 | 880013 | 880070 | 880127 | 880185 | 57 |
| 759 | 880242 | 880299 | 880356 | 880413 | 880471 | 880528 | 880585 | 880642 | 880699 | 880756 | 57 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 760 | 880814 | 880871 | 880928 | 880985 | 881042 | 881099 | 881156 | 881213 | 881271 | 881328 | 57 |
| 761 | 881385 | 881442 | 881499 | 881556 | 881613 | 881670 | 881727 | 881784 | 881841 | 881898 | 57 |
| 762 | 881955 | 882012 | 882069 | 882126 | 882183 | 882240 | 882297 | 882354 | 882411 | 882468 | 57 |
| 763 | 882525 | 882582 | 882638 | 882695 | 882752 | 882809 | 882866 | 882923 | 882980 | 883037 | 57 |
| 764 | 883093 | 883150 | 883207 | 883264 | 883321 | 883378 | 883434 | 883491 | 883548 | 883605 | 57 |
| 765 | 883661 | 883718 | 883775 | 883832 | 883889 | 883945 | 884002 | 884059 | 884115 | 884172 | 57 |
| 766 | 884229 | 884286 | 884342 | 884399 | 884456 | 884512 | 884569 | 884626 | 884682 | 884739 | 57 |
| 767 | 884795 | 884852 | 884909 | 884965 | 885022 | 885078 | 885135 | 885192 | 885248 | 885305 | 57 |
| 768 | 885361 | 885418 | 885474 | 885531 | 885587 | 885644 | 885700 | 885757 | 885813 | 885870 | 57 |
| 769 | 885926 | 885983 | 886039 | 886096 | 886152 | 886209 | 886265 | 886322 | 886378 | 886434 | 56 |
| 770 | 886491 | 886547 | 886604 | 886660 | 886716 | 886773 | 886829 | 886885 | 886942 | 886998 | 56 |
| 771 | 887054 | 887111 | 887167 | 887223 | 887280 | 887336 | 887392 | 887449 | 887505 | 887561 | 56 |
| 772 | 887617 | 887674 | 887730 | 887786 | 887842 | 887899 | 887955 | 888011 | 888067 | 888123 | 56 |
| 773 | 888180 | 888236 | 888292 | 888348 | 888404 | 888460 | 888517 | 888573 | 888629 | 888685 | 56 |
| 774 | 888741 | 888797 | 888853 | 888909 | 888965 | 889021 | 889078 | 889134 | 889190 | 889246 | 56 |
| 775 | 889302 | 889358 | 889414 | 889470 | 889526 | 889582 | 889638 | 889694 | 889750 | 889806 | 56 |
| 776 | 889862 | 889918 | 889974 | 890030 | 890086 | 890142 | 890197 | 890253 | 890309 | 890365 | 56 |
| 777 | 890421 | 890477 | 890533 | 890589 | 890645 | 890700 | 890756 | 890812 | 890868 | 890924 | 56 |
| 778 | 890980 | 891035 | 891091 | 891147 | 891203 | 891259 | 891314 | 891370 | 891426 | 891482 | 56 |
| 779 | 891538 | 891593 | 891649 | 891705 | 891760 | 891816 | 891872 | 891928 | 891983 | 892039 | 56 |
| 780 | 892095 | 892150 | 892206 | 892262 | 892317 | 892373 | 892429 | 892484 | 892540 | 892595 | 56 |
| 781 | 892651 | 892707 | 892762 | 892818 | 892873 | 892929 | 892985 | 893040 | 893096 | 893151 | 56 |
| 782 | 893207 | 893262 | 893318 | 893373 | 893429 | 893484 | 893540 | 893595 | 893651 | 893706 | 56 |
| 783 | 893762 | 893817 | 893873 | 893928 | 893984 | 894039 | 894094 | 894150 | 894205 | 894261 | 55 |
| 784 | 894316 | 894372 | 894427 | 894482 | 894538 | 894593 | 894648 | 894704 | 894759 | 894814 | 55 |
| 785 | 894870 | 894925 | 894980 | 895036 | 895091 | 895146 | 895202 | 895257 | 895312 | 895367 | 55 |
| 786 | 895423 | 895478 | 895533 | 895588 | 895644 | 895699 | 895754 | 895809 | 895864 | 895920 | 55 |
| 787 | 895975 | 896030 | 896085 | 896140 | 896195 | 896251 | 896306 | 896361 | 896416 | 896471 | 55 |
| 788 | 896526 | 896581 | 896636 | 896692 | 896747 | 896802 | 896857 | 896912 | 896967 | 897022 | 55 |
| 789 | 897077 | 897132 | 897187 | 897242 | 897297 | 897352 | 897407 | 897462 | 897517 | 897572 | 55 |
| 790 | 897627 | 897682 | 897737 | 897792 | 897847 | 897902 | 897957 | 898012 | 898067 | 898122 | 55 |
| 791 | 898177 | 898231 | 898286 | 898341 | 898396 | 898451 | 898506 | 898561 | 898616 | 898670 | 55 |
| 792 | 898725 | 898780 | 898835 | 898890 | 898945 | 898999 | 899054 | 899109 | 899164 | 899218 | 55 |
| 793 | 899273 | 899328 | 899383 | 899438 | 899492 | 899547 | 899602 | 899656 | 899711 | 899766 | 55 |
| 794 | 899821 | 899875 | 899930 | 899985 | 900039 | 900094 | 900149 | 900203 | 900258 | 900313 | 55 |
| 795 | 900367 | 900422 | 900476 | 900531 | 900586 | 900640 | 900695 | 900749 | 900804 | 900859 | 55 |
| 796 | 900913 | 900968 | 901022 | 901077 | 901131 | 901186 | 901240 | 901295 | 901349 | 901404 | 55 |
| 797 | 901458 | 901513 | 901567 | 901622 | 901676 | 901731 | 901785 | 901840 | 901894 | 901949 | 54 |
| 798 | 902003 | 902057 | 902112 | 902166 | 902221 | 902275 | 902329 | 902384 | 902438 | 902492 | 54 |
| 799 | 902547 | 902601 | 902656 | 902710 | 902764 | 902819 | 902873 | 902927 | 902981 | 903036 | 54 |
| 800 | 903090 | 903144 | 903199 | 903253 | 903307 | 903361 | 903416 | 903470 | 903524 | 903578 | 54 |
| 801 | 903633 | 903687 | 903741 | 903795 | 903849 | 903904 | 903958 | 904012 | 904066 | 904120 | 54 |
| 802 | 904174 | 904229 | 904283 | 904337 | 904391 | 904445 | 904499 | 904553 | 904607 | 904662 | 54 |
| 803 | 904716 | 904770 | 904824 | 904878 | 904932 | 904986 | 905040 | 905094 | 905148 | 905202 | 54 |
| 804 | 905256 | 905310 | 905364 | 905418 | 905472 | 905526 | 905580 | 905634 | 905688 | 905742 | 54 |
| 805 | 905796 | 905850 | 905904 | 905958 | 906012 | 906066 | 906120 | 906173 | 906227 | 906281 | 54 |
| 806 | 906335 | 906389 | 906443 | 906497 | 906551 | 906604 | 906658 | 906712 | 906766 | 906820 | 54 |
| 807 | 906874 | 906927 | 906981 | 907035 | 907089 | 907143 | 907196 | 907250 | 907304 | 907358 | 54 |
| 808 | 907411 | 907465 | 907519 | 907573 | 907626 | 907680 | 907734 | 907787 | 907841 | 907895 | 54 |
| 809 | 907949 | 908002 | 908056 | 908110 | 908163 | 908217 | 908271 | 908324 | 908378 | 908431 | 54 |
| 810 | 908485 | 908539 | 908592 | 908646 | 908699 | 908753 | 908807 | 908860 | 908914 | 908967 | 54 |
| 811 | 909021 | 909074 | 909128 | 909182 | 909235 | 909289 | 909342 | 909396 | 909449 | 909503 | 54 |
| 812 | 909556 | 909610 | 909663 | 909717 | 909770 | 909823 | 909877 | 909930 | 909984 | 910037 | 53 |
| 813 | 910091 | 910144 | 910197 | 910251 | 910304 | 910358 | 910411 | 910464 | 910518 | 910571 | 53 |
| 814 | 910624 | 910678 | 910731 | 910784 | 910838 | 910891 | 910944 | 910998 | 911051 | 911104 | 53 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 815 | 911158 | 911211 | 911264 | 911317 | 911371 | 911424 | 911477 | 911531 | 911584 | 911637 | 53 |
| 816 | 911690 | 911743 | 911797 | 911850 | 911903 | 911956 | 912009 | 912063 | 912116 | 912169 | 53 |
| 817 | 912222 | 912275 | 912328 | 912382 | 912435 | 912488 | 912541 | 912594 | 912647 | 912700 | 53 |
| 818 | 912753 | 912806 | 912860 | 912913 | 912966 | 913019 | 913072 | 913125 | 913178 | 913231 | 53 |
| 819 | 913284 | 913337 | 913390 | 913443 | 913496 | 913549 | 913602 | 913655 | 913708 | 913761 | 53 |
| 820 | 913814 | 913867 | 913920 | 913973 | 914026 | 914079 | 914132 | 914184 | 914237 | 914290 | 53 |
| 821 | 914343 | 914396 | 914449 | 914502 | 914555 | 914608 | 914660 | 914713 | 914766 | 914819 | 53 |
| 822 | 914872 | 914925 | 914978 | 915030 | 915083 | 915136 | 915189 | 915242 | 915294 | 915347 | 53 |
| 823 | 915400 | 915453 | 915505 | 915558 | 915611 | 915664 | 915716 | 915769 | 915822 | 915875 | 53 |
| 824 | 915927 | 915980 | 916033 | 916085 | 916138 | 916191 | 916243 | 916296 | 916349 | 916401 | 53 |
| 825 | 916454 | 916507 | 916559 | 916612 | 916665 | 916717 | 916770 | 916822 | 916875 | 916928 | 53 |
| 826 | 916980 | 917033 | 917085 | 917138 | 917190 | 917243 | 917295 | 917348 | 917401 | 917453 | 53 |
| 827 | 917506 | 917558 | 917611 | 917663 | 917716 | 917768 | 917821 | 917873 | 917925 | 917978 | 52 |
| 828 | 918030 | 918083 | 918135 | 918188 | 918240 | 918293 | 918345 | 918397 | 918450 | 918502 | 52 |
| 829 | 918555 | 918607 | 918659 | 918712 | 918764 | 918816 | 918869 | 918921 | 918973 | 919026 | 52 |
| 830 | 919078 | 919130 | 919183 | 919235 | 919287 | 919340 | 919392 | 919444 | 919497 | 919549 | 52 |
| 831 | 919601 | 919653 | 919706 | 919758 | 919810 | 919862 | 919915 | 919967 | 920019 | 920071 | 52 |
| 832 | 920123 | 920176 | 920228 | 920280 | 920332 | 920384 | 920436 | 920489 | 920541 | 920593 | 52 |
| 833 | 920645 | 920697 | 920749 | 920801 | 920854 | 920906 | 920958 | 921010 | 921062 | 921114 | 52 |
| 834 | 921166 | 921218 | 921270 | 921322 | 921374 | 921426 | 921478 | 921530 | 921582 | 921634 | 52 |
| 835 | 921687 | 921739 | 921791 | 921843 | 921895 | 921947 | 921998 | 922050 | 922102 | 922154 | 52 |
| 836 | 922206 | 922258 | 922310 | 922362 | 922414 | 922466 | 922518 | 922570 | 922622 | 922674 | 52 |
| 837 | 922726 | 922777 | 922829 | 922881 | 922933 | 922985 | 923037 | 923089 | 923140 | 923192 | 52 |
| 838 | 923244 | 923296 | 923348 | 923400 | 923451 | 923503 | 923555 | 923607 | 923658 | 923710 | 52 |
| 839 | 923762 | 923814 | 923866 | 923917 | 923969 | 924021 | 924072 | 924124 | 924176 | 924228 | 52 |
| 840 | 924279 | 924331 | 924383 | 924434 | 924486 | 924538 | 924589 | 924641 | 924693 | 924744 | 52 |
| 841 | 924796 | 924848 | 924899 | 924951 | 925003 | 925054 | 925106 | 925157 | 925209 | 925261 | 52 |
| 842 | 925312 | 925364 | 925415 | 925467 | 925518 | 925570 | 925622 | 925673 | 925725 | 925776 | 52 |
| 843 | 925828 | 925879 | 925931 | 925982 | 926034 | 926085 | 926137 | 926188 | 926240 | 926291 | 51 |
| 844 | 926342 | 926394 | 926445 | 926497 | 926548 | 926600 | 926651 | 926703 | 926754 | 926805 | 51 |
| 845 | 926857 | 926908 | 926960 | 927011 | 927062 | 927114 | 927165 | 927216 | 927268 | 927319 | 51 |
| 846 | 927370 | 927422 | 927473 | 927524 | 927576 | 927627 | 927678 | 927730 | 927781 | 927832 | 51 |
| 847 | 927883 | 927935 | 927986 | 928037 | 928089 | 928140 | 928191 | 928242 | 928293 | 928345 | 51 |
| 848 | 928396 | 928447 | 928498 | 928550 | 928601 | 928652 | 928703 | 928754 | 928805 | 928857 | 51 |
| 849 | 928908 | 928959 | 929010 | 929061 | 929112 | 929163 | 929215 | 929266 | 929317 | 929368 | 51 |
| 850 | 929419 | 929470 | 929521 | 929572 | 929623 | 929674 | 929725 | 929776 | 929828 | 929879 | 51 |
| 851 | 929930 | 929981 | 930032 | 930083 | 930134 | 930185 | 930236 | 930287 | 930338 | 930389 | 51 |
| 852 | 930440 | 930491 | 930542 | 930593 | 930643 | 930694 | 930745 | 930796 | 930847 | 930898 | 51 |
| 853 | 930949 | 931000 | 931051 | 931102 | 931153 | 931204 | 931254 | 931305 | 931356 | 931407 | 51 |
| 854 | 931458 | 931509 | 931560 | 931610 | 931661 | 931712 | 931763 | 931814 | 931865 | 931915 | 51 |
| 855 | 931966 | 932017 | 932068 | 932119 | 932169 | 932220 | 932271 | 932322 | 932372 | 932423 | 51 |
| 856 | 932474 | 932525 | 932575 | 932626 | 932677 | 932727 | 932778 | 932829 | 932880 | 932930 | 51 |
| 857 | 932981 | 933032 | 933082 | 933133 | 933184 | 933234 | 933285 | 933335 | 933386 | 933437 | 51 |
| 858 | 933487 | 933538 | 933589 | 933639 | 933690 | 933740 | 933791 | 933842 | 933892 | 933943 | 51 |
| 859 | 933993 | 934044 | 934094 | 934145 | 934195 | 934246 | 934296 | 934347 | 934397 | 934448 | 51 |
| 860 | 934496 | 934549 | 934599 | 934650 | 934700 | 934751 | 934801 | 934852 | 934902 | 934953 | 50 |
| 861 | 935003 | 935054 | 935104 | 935154 | 935205 | 935255 | 935306 | 935356 | 935407 | 935457 | 50 |
| 862 | 935507 | 935558 | 935608 | 935658 | 935709 | 935759 | 935810 | 935860 | 935910 | 935961 | 50 |
| 863 | 936011 | 936061 | 936111 | 936162 | 936212 | 936262 | 936313 | 936363 | 936413 | 936464 | 50 |
| 864 | 936514 | 936564 | 936614 | 936665 | 936715 | 936765 | 936815 | 936866 | 936916 | 936966 | 50 |
| 865 | 937016 | 937066 | 937117 | 937167 | 937217 | 937267 | 937317 | 937367 | 937418 | 937468 | 50 |
| 866 | 937518 | 937568 | 937618 | 937668 | 937718 | 937769 | 937819 | 937869 | 937919 | 937969 | 50 |
| 867 | 938019 | 938069 | 938119 | 938169 | 938219 | 938270 | 938320 | 938370 | 938420 | 938470 | 50 |
| 868 | 938520 | 938570 | 938620 | 938670 | 938720 | 938770 | 938820 | 938870 | 938920 | 938970 | 50 |
| 869 | 939020 | 939070 | 939120 | 939170 | 939220 | 939270 | 939320 | 939370 | 939419 | 939469 | 50 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 870 | 939519 | 939569 | 939619 | 939669 | 939719 | 939769 | 939819 | 939869 | 939918 | 939968 | 50 |
| 871 | 940018 | 940068 | 940118 | 940168 | 940218 | 940267 | 940317 | 940367 | 940417 | 940467 | 50 |
| 872 | 940517 | 940566 | 940616 | 940666 | 940716 | 940765 | 940815 | 940865 | 940915 | 940965 | 50 |
| 873 | 941014 | 941064 | 941114 | 941164 | 941213 | 941263 | 941313 | 941362 | 941412 | 941462 | 50 |
| 874 | 941511 | 941561 | 941611 | 941661 | 941710 | 941760 | 941810 | 941859 | 941909 | 941958 | 50 |
| 875 | 942008 | 942058 | 942107 | 942157 | 942207 | 942256 | 942306 | 942355 | 942405 | 942455 | 50 |
| 876 | 942504 | 942554 | 942603 | 942653 | 942702 | 942752 | 942802 | 942851 | 942901 | 942950 | 50 |
| 877 | 943000 | 943049 | 943099 | 943148 | 943198 | 943247 | 943297 | 943346 | 943396 | 943445 | 49 |
| 878 | 943495 | 943544 | 943593 | 943643 | 943692 | 943742 | 943791 | 943841 | 943890 | 943940 | 49 |
| 879 | 943989 | 944038 | 944088 | 944137 | 944187 | 944236 | 944285 | 944335 | 944384 | 944433 | 49 |
| 880 | 944483 | 944532 | 944581 | 944631 | 944680 | 944729 | 944779 | 944828 | 944877 | 944927 | 49 |
| 881 | 944976 | 945025 | 945075 | 945124 | 945173 | 945222 | 945272 | 945321 | 945370 | 945419 | 49 |
| 882 | 945469 | 945518 | 945567 | 945616 | 945666 | 945715 | 945764 | 945813 | 945862 | 945912 | 49 |
| 883 | 945961 | 946010 | 946059 | 946108 | 946157 | 946207 | 946256 | 946305 | 946354 | 946403 | 49 |
| 884 | 946452 | 946501 | 946551 | 946600 | 946649 | 946698 | 946747 | 946796 | 946845 | 946894 | 49 |
| 885 | 946943 | 946992 | 947041 | 947091 | 947140 | 947189 | 947238 | 947287 | 947336 | 947385 | 49 |
| 886 | 947434 | 947483 | 947532 | 947581 | 947630 | 947679 | 947728 | 947777 | 947826 | 947875 | 49 |
| 887 | 947924 | 947973 | 948022 | 948071 | 948119 | 948168 | 948217 | 948266 | 948315 | 948364 | 49 |
| 888 | 948413 | 948462 | 948511 | 948560 | 948609 | 948657 | 948706 | 948755 | 948804 | 948853 | 49 |
| 889 | 948902 | 948951 | 949000 | 949048 | 949097 | 949146 | 949195 | 949244 | 949292 | 949341 | 49 |
| 890 | 949390 | 949439 | 949488 | 949536 | 949585 | 949634 | 949683 | 949732 | 949780 | 949829 | 49 |
| 891 | 949878 | 949926 | 949975 | 950024 | 950073 | 950121 | 950170 | 950219 | 950268 | 950316 | 49 |
| 892 | 950365 | 950414 | 950462 | 950511 | 950560 | 950608 | 950657 | 950706 | 950754 | 950803 | 49 |
| 893 | 950852 | 950900 | 950949 | 950997 | 951046 | 951095 | 951143 | 951192 | 951240 | 951289 | 49 |
| 894 | 951338 | 951386 | 951435 | 951483 | 951532 | 951580 | 951629 | 951677 | 951726 | 951775 | 49 |
| 895 | 951823 | 951872 | 951920 | 951969 | 952017 | 952066 | 952114 | 952163 | 952211 | 952260 | 48 |
| 896 | 952308 | 952357 | 952405 | 952453 | 952502 | 952550 | 952599 | 952647 | 952696 | 952744 | 48 |
| 897 | 952792 | 952841 | 952889 | 952938 | 952986 | 953035 | 953083 | 953131 | 953180 | 953228 | 48 |
| 898 | 953276 | 953325 | 953373 | 953421 | 953470 | 953518 | 953566 | 953615 | 953663 | 953711 | 48 |
| 899 | 953760 | 953808 | 953856 | 953905 | 953953 | 954001 | 954049 | 954098 | 954146 | 954194 | 48 |
| 900 | 954243 | 954291 | 954339 | 954387 | 954436 | 954484 | 954532 | 954580 | 954628 | 954677 | 48 |
| 901 | 954725 | 954773 | 954821 | 954869 | 954918 | 954966 | 955014 | 955062 | 955110 | 955158 | 48 |
| 902 | 955207 | 955255 | 955303 | 955351 | 955399 | 955447 | 955495 | 955543 | 955592 | 955640 | 48 |
| 903 | 955688 | 955736 | 955784 | 955832 | 955880 | 955928 | 955976 | 956024 | 956072 | 956120 | 48 |
| 904 | 956168 | 956217 | 956265 | 956313 | 956361 | 956409 | 956457 | 956505 | 956553 | 956601 | 48 |
| 905 | 956649 | 956697 | 956745 | 956793 | 956841 | 956889 | 956936 | 956984 | 957032 | 957080 | 48 |
| 906 | 957128 | 957176 | 957224 | 957272 | 957320 | 957368 | 957416 | 957464 | 957512 | 957559 | 48 |
| 907 | 957607 | 957655 | 957703 | 957751 | 957799 | 957847 | 957895 | 957942 | 957990 | 958038 | 48 |
| 908 | 958086 | 958134 | 958182 | 958229 | 958277 | 958325 | 958373 | 958421 | 958468 | 958516 | 48 |
| 909 | 958564 | 958612 | 958659 | 958707 | 958755 | 958803 | 958851 | 958898 | 958946 | 958994 | 48 |
| 910 | 959041 | 959089 | 959137 | 959185 | 959232 | 959280 | 959328 | 959375 | 959423 | 959471 | 48 |
| 911 | 959518 | 959566 | 959614 | 959661 | 959709 | 959757 | 959804 | 959852 | 959900 | 959947 | 48 |
| 912 | 959995 | 960043 | 960090 | 960138 | 960185 | 960233 | 960281 | 960328 | 960376 | 960423 | 48 |
| 913 | 960471 | 960518 | 960566 | 960614 | 960661 | 960709 | 960756 | 960804 | 960851 | 960899 | 48 |
| 914 | 960946 | 960994 | 961041 | 961089 | 961136 | 961184 | 961231 | 961279 | 961326 | 961374 | 48 |
| 915 | 961421 | 961469 | 961516 | 961564 | 961611 | 961658 | 961706 | 961753 | 961801 | 961848 | 47 |
| 916 | 961896 | 961943 | 961990 | 962038 | 962085 | 962133 | 962180 | 962227 | 962275 | 962322 | 47 |
| 917 | 962369 | 962417 | 962464 | 962511 | 962559 | 962606 | 962653 | 962701 | 962748 | 962795 | 47 |
| 918 | 962843 | 962890 | 962937 | 962985 | 963032 | 963079 | 963126 | 963174 | 963221 | 963268 | 47 |
| 919 | 963316 | 963363 | 963410 | 963457 | 963505 | 963552 | 963599 | 963646 | 963693 | 963741 | 47 |
| 920 | 963788 | 963835 | 963882 | 963929 | 963977 | 964024 | 964071 | 964118 | 964165 | 964213 | 47 |
| 921 | 964260 | 964307 | 964354 | 964401 | 964448 | 964495 | 964543 | 964590 | 964637 | 964684 | 47 |
| 922 | 964731 | 964778 | 964825 | 964872 | 964919 | 964966 | 965014 | 965061 | 965108 | 965155 | 47 |
| 923 | 965202 | 965249 | 965296 | 965343 | 965390 | 965437 | 965484 | 965531 | 965578 | 965625 | 47 |
| 924 | 965672 | 965719 | 965766 | 965813 | 965860 | 965907 | 965954 | 966001 | 966048 | 966095 | 47 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 925 | 966142 | 966189 | 966236 | 966283 | 966330 | 966376 | 966423 | 966470 | 966517 | 966564 | 47 |
| 926 | 966611 | 966658 | 966705 | 966752 | 966799 | 966845 | 966892 | 966939 | 966986 | 967033 | 47 |
| 927 | 967080 | 967127 | 967173 | 967220 | 967267 | 967314 | 967361 | 967408 | 967454 | 967501 | 47 |
| 928 | 967548 | 967595 | 967642 | 967688 | 967735 | 967782 | 967829 | 967875 | 967922 | 967969 | 47 |
| 929 | 968016 | 968063 | 968109 | 968156 | 968203 | 968249 | 968296 | 968343 | 968390 | 968436 | 47 |
| 930 | 968483 | 968530 | 968576 | 968623 | 968670 | 968716 | 968763 | 968810 | 968856 | 968903 | 47 |
| 931 | 968950 | 968996 | 969043 | 969090 | 969136 | 969183 | 969230 | 969276 | 969323 | 969369 | 47 |
| 932 | 969416 | 969463 | 969509 | 969556 | 969602 | 969649 | 969695 | 969742 | 969789 | 969835 | 47 |
| 933 | 969882 | 969928 | 969975 | 970021 | 970068 | 970114 | 970161 | 970207 | 970254 | 970300 | 47 |
| 934 | 970347 | 970393 | 970440 | 970486 | 970533 | 970579 | 970626 | 970672 | 970719 | 970765 | 47 |
| 935 | 970812 | 970858 | 970905 | 970951 | 970997 | 971044 | 971090 | 971137 | 971183 | 971229 | 46 |
| 936 | 971276 | 971322 | 971369 | 971415 | 971461 | 971508 | 971554 | 971601 | 971647 | 971693 | 46 |
| 937 | 971740 | 971786 | 971832 | 971879 | 971925 | 971971 | 972018 | 972064 | 972110 | 972157 | 46 |
| 938 | 972203 | 972249 | 972295 | 972342 | 972388 | 972434 | 972481 | 972527 | 972573 | 972619 | 46 |
| 939 | 972666 | 972712 | 972758 | 972804 | 972851 | 972897 | 972943 | 972989 | 973035 | 973082 | 46 |
| 940 | 973128 | 973174 | 973220 | 973266 | 973313 | 973359 | 973405 | 973451 | 973497 | 973544 | 46 |
| 941 | 973590 | 973636 | 973682 | 973728 | 973774 | 973820 | 973866 | 973913 | 973959 | 974005 | 46 |
| 942 | 974051 | 974097 | 974143 | 974189 | 974235 | 974281 | 974327 | 974374 | 974420 | 974466 | 46 |
| 943 | 974512 | 974558 | 974604 | 974650 | 974696 | 974742 | 974788 | 974834 | 974880 | 974926 | 46 |
| 944 | 974972 | 975018 | 975064 | 975110 | 975156 | 975202 | 975248 | 975294 | 975340 | 975386 | 46 |
| 945 | 975432 | 975478 | 975524 | 975570 | 975616 | 975662 | 975708 | 975753 | 975799 | 975845 | 46 |
| 946 | 975891 | 975937 | 975983 | 976029 | 976075 | 976121 | 976167 | 976212 | 976258 | 976304 | 46 |
| 947 | 976350 | 976396 | 976442 | 976488 | 976533 | 976579 | 976625 | 976671 | 976717 | 976763 | 46 |
| 948 | 976808 | 976854 | 976900 | 976946 | 976992 | 977037 | 977083 | 977129 | 977175 | 977220 | 46 |
| 949 | 977266 | 977312 | 977358 | 977404 | 977449 | 977495 | 977541 | 977586 | 977632 | 977678 | 46 |
| 950 | 977724 | 977769 | 977815 | 977861 | 977906 | 977952 | 977998 | 978044 | 978089 | 978135 | 46 |
| 951 | 978181 | 978226 | 978272 | 978318 | 978363 | 978409 | 978454 | 978500 | 978546 | 978591 | 46 |
| 952 | 978637 | 978683 | 978728 | 978774 | 978819 | 978865 | 978911 | 978956 | 979002 | 979047 | 46 |
| 953 | 979093 | 979139 | 979184 | 979230 | 979275 | 979321 | 979366 | 979412 | 979457 | 979503 | 46 |
| 954 | 979548 | 979594 | 979639 | 979685 | 979730 | 979776 | 979821 | 979867 | 979912 | 979958 | 46 |
| 955 | 980003 | 980049 | 980094 | 980140 | 980185 | 980231 | 980276 | 980322 | 980367 | 980413 | 45 |
| 956 | 980458 | 980503 | 980549 | 980594 | 980640 | 980685 | 980730 | 980776 | 980821 | 980867 | 45 |
| 957 | 980912 | 980957 | 981003 | 981048 | 981093 | 981139 | 981184 | 981230 | 981275 | 981320 | 45 |
| 958 | 981366 | 981411 | 981456 | 981502 | 981547 | 981592 | 981637 | 981683 | 981728 | 981773 | 45 |
| 959 | 981819 | 981864 | 981909 | 981954 | 982000 | 982045 | 982090 | 982136 | 982181 | 982226 | 45 |
| 960 | 982271 | 982317 | 982362 | 982407 | 982452 | 982497 | 982543 | 982588 | 982633 | 982678 | 45 |
| 961 | 982723 | 982769 | 982814 | 982859 | 982904 | 982949 | 982995 | 983040 | 983085 | 983130 | 45 |
| 962 | 983175 | 983220 | 983265 | 983311 | 983356 | 983401 | 983446 | 983491 | 983537 | 983581 | 45 |
| 963 | 983626 | 983671 | 983717 | 983762 | 983807 | 983852 | 983897 | 983942 | 983987 | 984032 | 45 |
| 964 | 984077 | 984122 | 984167 | 984212 | 984257 | 984302 | 984347 | 984392 | 984437 | 984482 | 45 |
| 965 | 984527 | 984572 | 984617 | 984662 | 984707 | 984752 | 984797 | 984842 | 984887 | 984932 | 45 |
| 966 | 984977 | 985022 | 985067 | 985112 | 985157 | 985202 | 985247 | 985292 | 985337 | 985382 | 45 |
| 967 | 985427 | 985471 | 985516 | 985561 | 985606 | 985651 | 985696 | 985741 | 985786 | 985831 | 45 |
| 968 | 985875 | 985920 | 985965 | 986010 | 986055 | 986100 | 986145 | 986189 | 986234 | 986279 | 45 |
| 969 | 986324 | 986369 | 986413 | 986458 | 986503 | 986548 | 986593 | 986637 | 986682 | 986727 | 45 |
| 970 | 986772 | 986817 | 986861 | 986906 | 986951 | 986996 | 987040 | 987085 | 987130 | 987175 | 45 |
| 971 | 987219 | 987264 | 987309 | 987353 | 987398 | 987443 | 987488 | 987532 | 987577 | 987622 | 45 |
| 972 | 987666 | 987711 | 987756 | 987800 | 987845 | 987890 | 987934 | 987979 | 988024 | 988068 | 45 |
| 973 | 988113 | 988158 | 988202 | 988247 | 988291 | 988336 | 988381 | 988425 | 988470 | 988514 | 45 |
| 974 | 988559 | 988604 | 988648 | 988693 | 988737 | 988782 | 988826 | 988871 | 988916 | 988960 | 45 |
| 975 | 989005 | 989049 | 989094 | 989138 | 989183 | 989227 | 989272 | 989316 | 989361 | 989405 | 44 |
| 976 | 989450 | 989494 | 989539 | 989583 | 989628 | 989672 | 989717 | 989761 | 989807 | 989850 | 44 |
| 977 | 989895 | 989939 | 989984 | 990028 | 990072 | 990117 | 990161 | 990206 | 990250 | 990294 | 44 |
| 978 | 990339 | 990383 | 990428 | 990472 | 990516 | 990561 | 990605 | 990650 | 990694 | 990738 | 44 |
| 979 | 990783 | 990827 | 990871 | 990916 | 990960 | 991004 | 991049 | 991093 | 991137 | 991182 | 44 |

| No. | 0 | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 980 | 991226 | 991270 | 991315 | 991359 | 991403 | 991448 | 991492 | 991536 | 991581 | 991625 | 44 |
| 981 | 991669 | 991713 | 991758 | 991802 | 991846 | 991890 | 991935 | 991979 | 992023 | 992067 | 44 |
| 982 | 992112 | 992156 | 992200 | 992244 | 992288 | 992333 | 992377 | 992421 | 992465 | 992509 | 44 |
| 983 | 992554 | 992598 | 992642 | 992686 | 992730 | 992774 | 992819 | 992863 | 992907 | 992951 | 44 |
| 984 | 992995 | 993039 | 993083 | 993128 | 993172 | 993216 | 993260 | 993304 | 993348 | 993392 | 44 |
| 985 | 993436 | 993480 | 993524 | 993569 | 993613 | 993657 | 993701 | 993745 | 993789 | 993833 | 44 |
| 986 | 993877 | 993921 | 993965 | 994009 | 994053 | 994097 | 994141 | 994185 | 994229 | 994273 | 44 |
| 987 | 994317 | 994361 | 994405 | 994449 | 994493 | 994537 | 994581 | 994625 | 994669 | 994713 | 44 |
| 988 | 994757 | 994801 | 994845 | 994889 | 994933 | 994977 | 995021 | 995065 | 995109 | 995152 | 44 |
| 989 | 995196 | 995240 | 995284 | 995328 | 995372 | 995416 | 995460 | 995504 | 995547 | 995591 | 44 |
| 990 | 995635 | 995679 | 995723 | 995767 | 995811 | 995855 | 995898 | 995942 | 995986 | 996030 | 44 |
| 991 | 996074 | 996118 | 996161 | 996205 | 996249 | 996293 | 996337 | 996380 | 996424 | 996468 | 44 |
| 992 | 996512 | 996555 | 996599 | 996643 | 996687 | 996731 | 996774 | 996818 | 996862 | 996906 | 44 |
| 993 | 996949 | 996993 | 997037 | 997080 | 997124 | 997168 | 997212 | 997255 | 997299 | 997343 | 44 |
| 994 | 997386 | 997430 | 997474 | 997517 | 997561 | 997605 | 997649 | 997692 | 997736 | 997779 | 44 |
| 995 | 997823 | 997867 | 997910 | 997954 | 997998 | 998041 | 998085 | 998129 | 998172 | 998216 | 44 |
| 996 | 998259 | 998303 | 998347 | 998390 | 998434 | 998477 | 998521 | 998565 | 998608 | 998652 | 44 |
| 997 | 998695 | 998739 | 998782 | 998826 | 998869 | 998913 | 998956 | 999000 | 999044 | 999087 | 44 |
| 998 | 999131 | 999174 | 999218 | 999261 | 999305 | 999348 | 999392 | 999435 | 999479 | 999522 | 43 |
| 999 | 999566 | 999609 | 999652 | 999696 | 999739 | 999783 | 999826 | 999870 | 999913 | 999957 | 43 |

| M | 0° | 1° | 2° | 3° | 4° | 5° | 6° | 7° | 8° | 9° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 000000 | 017452 | 034899 | 052336 | 069757 | 087156 | 104529 | 121869 | 139173 | 156435 | 60 |
| 1 | 000291 | 017743 | 035190 | 052626 | 070047 | 087446 | 104818 | 122158 | 139461 | 156722 | 59 |
| 2 | 000581 | 018034 | 035481 | 052917 | 070337 | 087735 | 105107 | 122447 | 139749 | 157009 | 58 |
| 3 | 000873 | 018325 | 035772 | 053207 | 070627 | 088025 | 105396 | 122736 | 140037 | 157296 | 57 |
| 4 | 001164 | 018616 | 036062 | 053498 | 070917 | 088315 | 105686 | 123024 | 140325 | 157584 | 56 |
| 5 | 001454 | 018907 | 036353 | 053788 | 071207 | 088605 | 105975 | 123313 | 140613 | 157871 | 55 |
| 6 | 001745 | 019197 | 036644 | 054079 | 071497 | 088894 | 106264 | 123602 | 140901 | 158158 | 54 |
| 7 | 002036 | 019488 | 036934 | 054369 | 071788 | 089184 | 106553 | 123890 | 141189 | 158445 | 53 |
| 8 | 002327 | 019779 | 037225 | 054660 | 072078 | 089474 | 106843 | 124179 | 141477 | 158733 | 52 |
| 9 | 002618 | 020070 | 037516 | 054950 | 072368 | 089764 | 107132 | 124467 | 141765 | 159020 | 51 |
| 10 | 002909 | 020361 | 037807 | 055241 | 072650 | 090053 | 107421 | 124756 | 142053 | 159307 | 50 |
| 11 | 003200 | 020652 | 038097 | 055531 | 072948 | 090343 | 107710 | 125045 | 142341 | 159594 | 49 |
| 12 | 003491 | 020942 | 038388 | 055822 | 073238 | 090633 | 107999 | 125333 | 142629 | 159881 | 48 |
| 13 | 003782 | 021233 | 038679 | 056112 | 073528 | 090922 | 108289 | 125622 | 142917 | 160168 | 47 |
| 14 | 004072 | 021524 | 038969 | 056402 | 073818 | 091212 | 108578 | 125910 | 143205 | 160456 | 46 |
| 15 | 004363 | 021815 | 039260 | 056693 | 074109 | 091502 | 108867 | 126199 | 143493 | 160743 | 45 |
| 16 | 004654 | 022105 | 039551 | 056983 | 074399 | 091791 | 109156 | 126488 | 143781 | 161030 | 44 |
| 17 | 004945 | 022397 | 039841 | 057274 | 074689 | 092081 | 109445 | 126776 | 144068 | 161317 | 43 |
| 18 | 005236 | 022687 | 040132 | 057564 | 074979 | 092371 | 109734 | 127065 | 144356 | 161604 | 42 |
| 19 | 005527 | 022978 | 040422 | 057854 | 075269 | 092660 | 110023 | 127353 | 144644 | 161891 | 41 |
| 20 | 005818 | 023269 | 040713 | 058145 | 075559 | 092950 | 110313 | 127642 | 144932 | 162178 | 40 |
| 21 | 006109 | 023560 | 041004 | 058435 | 075849 | 093240 | 110602 | 127930 | 145220 | 162465 | 39 |
| 22 | 006400 | 023851 | 041294 | 058726 | 076139 | 093529 | 110891 | 128219 | 145508 | 162752 | 38 |
| 23 | 006690 | 024141 | 041585 | 059016 | 076429 | 093819 | 111180 | 128507 | 145795 | 163039 | 37 |
| 24 | 006981 | 024432 | 041876 | 059306 | 076719 | 094108 | 111469 | 128796 | 146083 | 163326 | 36 |
| 25 | 007272 | 024723 | 042166 | 059597 | 077009 | 094398 | 111758 | 129084 | 146371 | 163613 | 35 |
| 26 | 007563 | 025014 | 042457 | 059887 | 077299 | 094688 | 112047 | 129373 | 146659 | 163900 | 34 |
| 27 | 007854 | 025305 | 042748 | 060178 | 077589 | 094977 | 112336 | 129661 | 146946 | 164187 | 33 |
| 28 | 008145 | 025595 | 043038 | 060468 | 077879 | 095267 | 112625 | 129949 | 147234 | 164474 | 32 |
| 29 | 008436 | 025886 | 043329 | 060758 | 078169 | 095556 | 112914 | 130238 | 147522 | 164761 | 31 |
| 30 | 008727 | 026177 | 043619 | 061049 | 078459 | 095846 | 113203 | 130526 | 147809 | 165048 | 30 |
| 31 | 009017 | 026468 | 043910 | 061339 | 078749 | 096135 | 113492 | 130815 | 148097 | 165335 | 29 |
| 32 | 009308 | 026759 | 044201 | 061629 | 079039 | 096425 | 113781 | 131103 | 148385 | 165621 | 28 |
| 33 | 009599 | 027049 | 044491 | 061920 | 079329 | 096714 | 114070 | 131391 | 148672 | 165908 | 27 |
| 34 | 009890 | 027340 | 044782 | 062210 | 079619 | 097004 | 114359 | 131680 | 148960 | 166195 | 26 |
| 35 | 010181 | 027631 | 045072 | 062500 | 079909 | 097293 | 114648 | 131968 | 149248 | 166482 | 25 |
| 36 | 010472 | 027922 | 045363 | 062791 | 080199 | 097583 | 114937 | 132256 | 149535 | 166769 | 24 |
| 37 | 010763 | 028212 | 045654 | 063081 | 080489 | 097872 | 115226 | 132545 | 149823 | 167056 | 23 |
| 38 | 011054 | 028503 | 045944 | 063371 | 080779 | 098162 | 115515 | 132833 | 150111 | 167342 | 22 |
| 39 | 011344 | 028794 | 046235 | 063661 | 081069 | 098451 | 115804 | 133121 | 150398 | 167629 | 21 |
| 40 | 011635 | 029085 | 046525 | 063952 | 081359 | 098741 | 116093 | 133410 | 150686 | 167916 | 20 |
| 41 | 011926 | 029376 | 046816 | 064242 | 081649 | 099030 | 116382 | 133698 | 150973 | 168203 | 19 |
| 42 | 012217 | 029666 | 047107 | 064532 | 081939 | 099320 | 116671 | 133986 | 151261 | 168489 | 18 |
| 43 | 012508 | 029957 | 047397 | 064823 | 082228 | 099609 | 116960 | 134274 | 151548 | 168776 | 17 |
| 44 | 012799 | 030248 | 047688 | 065113 | 082518 | 099899 | 117249 | 134563 | 151836 | 169063 | 16 |
| 45 | 013090 | 030539 | 047978 | 065403 | 082808 | 100188 | 117537 | 134851 | 152123 | 169350 | 15 |
| 46 | 013381 | 030829 | 048269 | 065693 | 083098 | 100478 | 117826 | 135139 | 152411 | 169636 | 14 |
| 47 | 013671 | 031120 | 048559 | 065984 | 083388 | 100767 | 118115 | 135427 | 152698 | 169923 | 13 |
| 48 | 013962 | 031411 | 048850 | 066274 | 083678 | 101056 | 118404 | 135716 | 152986 | 170210 | 12 |
| 49 | 014253 | 031702 | 049140 | 066564 | 083968 | 101346 | 118693 | 136004 | 153273 | 170496 | 11 |
| 50 | 014544 | 031992 | 049431 | 066854 | 084258 | 101635 | 118982 | 136292 | 153561 | 170783 | 10 |
| 51 | 014835 | 032283 | 049721 | 067145 | 084547 | 101925 | 119270 | 136580 | 153848 | 171069 | 9 |
| 52 | 015126 | 032574 | 050012 | 067435 | 084837 | 102214 | 119559 | 136868 | 154136 | 171356 | 8 |
| 53 | 015417 | 032864 | 050302 | 067725 | 085127 | 102503 | 119848 | 137156 | 154423 | 171643 | 7 |
| 54 | 015707 | 033155 | 050593 | 068015 | 085417 | 102793 | 120137 | 137445 | 154710 | 171929 | 6 |
| 55 | 015998 | 033446 | 050884 | 068306 | 085707 | 103082 | 120426 | 137733 | 154998 | 172216 | 5 |
| 56 | 016289 | 033737 | 051174 | 068596 | 085997 | 103371 | 120714 | 138021 | 155285 | 172502 | 4 |
| 57 | 016580 | 034027 | 051465 | 068886 | 086286 | 103661 | 121003 | 138309 | 155573 | 172789 | 3 |
| 58 | 016871 | 034318 | 051755 | 069176 | 086576 | 103950 | 121292 | 138597 | 155860 | 173075 | 2 |
| 59 | 017162 | 034609 | 052046 | 069466 | 086866 | 104239 | 121581 | 138885 | 156147 | 173362 | 1 |
| 60 | 017452 | 034900 | 052336 | 069757 | 087156 | 104529 | 121869 | 139173 | 156435 | 173648 | 0 |
| M | 89° | 88° | 87° | 86° | 85° | 84° | 83° | 82° | 81° | 80° | M |

NATURAL CO-SINES.

| M | 10° | 11° | 12° | 13° | 14° | 15° | 16° | 17° | 18° | 19° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 173648 | 190809 | 207912 | 224951 | 241922 | 258819 | 275637 | 292372 | 309017 | 325568 | 60 |
| 1 | 173935 | 191095 | 208196 | 225235 | 242204 | 259100 | 275917 | 292650 | 309294 | 325843 | 59 |
| 2 | 174221 | 191380 | 208481 | 225518 | 242486 | 259381 | 276197 | 292928 | 309570 | 326118 | 58 |
| 3 | 174508 | 191666 | 208765 | 225801 | 242769 | 259662 | 276476 | 293206 | 309847 | 326393 | 57 |
| 4 | 174794 | 191951 | 209050 | 226085 | 243051 | 259943 | 276756 | 293484 | 310123 | 326668 | 56 |
| 5 | 175080 | 192237 | 209334 | 226368 | 243333 | 260224 | 277035 | 293762 | 310400 | 326943 | 55 |
| 6 | 175367 | 192522 | 209619 | 226651 | 243615 | 260505 | 277315 | 294040 | 310676 | 327218 | 54 |
| 7 | 175653 | 192807 | 209903 | 226935 | 243897 | 260785 | 277594 | 294318 | 310953 | 327493 | 53 |
| 8 | 175940 | 193093 | 210187 | 227218 | 244179 | 261066 | 277874 | 294596 | 311229 | 327768 | 52 |
| 9 | 176226 | 193378 | 210472 | 227501 | 244461 | 261347 | 278153 | 294874 | 311506 | 328042 | 51 |
| 10 | 176512 | 193664 | 210756 | 227784 | 244743 | 261628 | 278432 | 295152 | 311782 | 328317 | 50 |
| 11 | 176798 | 193949 | 211041 | 228068 | 245025 | 261909 | 278712 | 295430 | 312059 | 328592 | 49 |
| 12 | 177085 | 194234 | 211325 | 228351 | 245307 | 262189 | 278991 | 295708 | 312335 | 328867 | 48 |
| 13 | 177371 | 194520 | 211609 | 228634 | 245589 | 262470 | 279270 | 295986 | 312611 | 329141 | 47 |
| 14 | 177657 | 194805 | 211893 | 228917 | 245871 | 262751 | 279550 | 296264 | 312888 | 329416 | 46 |
| 15 | 177944 | 195090 | 212178 | 229200 | 246153 | 263031 | 279829 | 296542 | 313164 | 329691 | 45 |
| 16 | 178230 | 195376 | 212462 | 229484 | 246435 | 263312 | 280108 | 296819 | 313440 | 329965 | 44 |
| 17 | 178516 | 195661 | 212746 | 229767 | 246717 | 263593 | 280388 | 297097 | 313716 | 330240 | 43 |
| 18 | 178802 | 195946 | 213030 | 230050 | 246999 | 263873 | 280667 | 297375 | 313993 | 330514 | 42 |
| 19 | 179088 | 196231 | 213315 | 230333 | 247281 | 264154 | 280946 | 297653 | 314269 | 330789 | 41 |
| 20 | 179375 | 196517 | 213599 | 230616 | 247563 | 264434 | 281225 | 297930 | 314545 | 331063 | 40 |
| 21 | 179661 | 196802 | 213883 | 230899 | 247845 | 264715 | 281504 | 298208 | 314821 | 331338 | 39 |
| 22 | 179947 | 197087 | 214167 | 231182 | 248126 | 264995 | 281783 | 298486 | 315097 | 331612 | 38 |
| 23 | 180233 | 197372 | 214451 | 231465 | 248408 | 265276 | 282062 | 298763 | 315373 | 331887 | 37 |
| 24 | 180519 | 197657 | 214735 | 231748 | 248690 | 265556 | 282342 | 299041 | 315649 | 332161 | 36 |
| 25 | 180805 | 197943 | 215019 | 232031 | 248972 | 265837 | 282621 | 299318 | 315925 | 332436 | 35 |
| 26 | 181091 | 198228 | 215304 | 232314 | 249253 | 266117 | 282900 | 299596 | 316201 | 332710 | 34 |
| 27 | 181377 | 198513 | 215588 | 232597 | 249535 | 266397 | 283179 | 299873 | 316477 | 332984 | 33 |
| 28 | 181664 | 198798 | 215872 | 232880 | 249817 | 266678 | 283458 | 300151 | 316753 | 333258 | 32 |
| 29 | 181950 | 199083 | 216156 | 233163 | 250098 | 266958 | 283736 | 300428 | 317029 | 333533 | 31 |
| 30 | 182236 | 199368 | 216440 | 233445 | 250380 | 267238 | 284015 | 300706 | 317305 | 333807 | 30 |
| 31 | 182522 | 199653 | 216724 | 233728 | 250662 | 267519 | 284294 | 300983 | 317581 | 334081 | 29 |
| 32 | 182808 | 199938 | 217008 | 234011 | 250943 | 267799 | 284573 | 301261 | 317856 | 334355 | 28 |
| 33 | 183094 | 200223 | 217292 | 234294 | 251225 | 268079 | 284852 | 301538 | 318132 | 334629 | 27 |
| 34 | 183379 | 200508 | 217575 | 234577 | 251506 | 268359 | 285131 | 301815 | 318408 | 334903 | 26 |
| 35 | 183665 | 200793 | 217859 | 234859 | 251788 | 268640 | 285410 | 302093 | 318684 | 335178 | 25 |
| 36 | 183951 | 201078 | 218143 | 235142 | 252069 | 268920 | 285688 | 302370 | 318959 | 335452 | 24 |
| 37 | 184237 | 201363 | 218427 | 235425 | 252351 | 269200 | 285967 | 302647 | 319235 | 335726 | 23 |
| 38 | 184523 | 201648 | 218711 | 235708 | 252632 | 269480 | 286246 | 302924 | 319511 | 336000 | 22 |
| 39 | 184809 | 201933 | 218995 | 235990 | 252914 | 269760 | 286525 | 303202 | 319786 | 336274 | 21 |
| 40 | 185095 | 202218 | 219279 | 236273 | 253195 | 270040 | 286803 | 303479 | 320062 | 336548 | 20 |
| 41 | 185381 | 202502 | 219562 | 236556 | 253477 | 270320 | 287082 | 303756 | 320337 | 336821 | 19 |
| 42 | 185667 | 202787 | 219846 | 236838 | 253758 | 270600 | 287361 | 304033 | 320613 | 337095 | 18 |
| 43 | 185952 | 203072 | 220130 | 237121 | 254039 | 270881 | 287639 | 304310 | 320889 | 337369 | 17 |
| 44 | 186238 | 203357 | 220414 | 237403 | 254321 | 271161 | 287918 | 304587 | 321164 | 337643 | 16 |
| 45 | 186524 | 203642 | 220697 | 237686 | 254602 | 271440 | 288196 | 304864 | 321440 | 337917 | 15 |
| 46 | 186810 | 203927 | 220981 | 237968 | 254883 | 271720 | 288475 | 305141 | 321715 | 338191 | 14 |
| 47 | 187096 | 204211 | 221265 | 238251 | 255165 | 272000 | 288753 | 305418 | 321990 | 338464 | 13 |
| 48 | 187381 | 204496 | 221549 | 238534 | 255446 | 272280 | 289032 | 305695 | 322266 | 338738 | 12 |
| 49 | 187667 | 204781 | 221832 | 238816 | 255727 | 272560 | 289310 | 305972 | 322541 | 339012 | 11 |
| 50 | 187953 | 205066 | 222116 | 239098 | 256008 | 272840 | 289589 | 306249 | 322816 | 339285 | 10 |
| 51 | 188239 | 205350 | 222399 | 239381 | 256289 | 273120 | 289867 | 306526 | 323092 | 339559 | 9 |
| 52 | 188524 | 205635 | 222683 | 239663 | 256571 | 273400 | 290146 | 306803 | 323367 | 339833 | 8 |
| 53 | 188810 | 205920 | 222967 | 239946 | 256852 | 273679 | 290424 | 307080 | 323642 | 340106 | 7 |
| 54 | 189095 | 206204 | 223250 | 240228 | 257133 | 273959 | 290702 | 307357 | 323917 | 340380 | 6 |
| 55 | 189381 | 206489 | 223534 | 240510 | 257414 | 274239 | 290981 | 307633 | 324193 | 340653 | 5 |
| 56 | 189667 | 206773 | 223817 | 240793 | 257695 | 274519 | 291259 | 307910 | 324468 | 340927 | 4 |
| 57 | 189952 | 207058 | 224101 | 241075 | 257976 | 274798 | 291537 | 308187 | 324743 | 341200 | 3 |
| 58 | 190238 | 207343 | 224384 | 241357 | 258257 | 275078 | 291815 | 308464 | 325018 | 341473 | 2 |
| 59 | 190523 | 207627 | 224668 | 241640 | 258538 | 275358 | 292094 | 308740 | 325293 | 341747 | 1 |
| 60 | 190809 | 207912 | 224951 | 241922 | 258819 | 275637 | 292372 | 309017 | 325568 | 342020 | 0 |
| M | 79° | 78° | 77° | 76° | 75° | 74° | 73° | 72° | 71° | 70° | M |

NATURAL CO-SINES.

| M | 20° | 21° | 22° | 23° | 24° | 25° | 26° | 27° | 28° | 29° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 342020 | 358368 | 374607 | 390731 | 406737 | 422618 | 438371 | 453991 | 469472 | 484810 | 60 |
| 1 | 342294 | 358640 | 374876 | 390999 | 407002 | 422882 | 438633 | 454250 | 469728 | 485064 | 59 |
| 2 | 342567 | 358911 | 375146 | 391267 | 407268 | 423146 | 438894 | 454509 | 469985 | 485318 | 58 |
| 3 | 342840 | 359183 | 375416 | 391534 | 407534 | 423409 | 439155 | 454768 | 470242 | 485573 | 57 |
| 4 | 343113 | 359454 | 375685 | 391802 | 407799 | 423673 | 439417 | 455027 | 470499 | 485827 | 56 |
| 5 | 343386 | 359725 | 375955 | 392070 | 408065 | 423936 | 439678 | 455286 | 470755 | 486081 | 55 |
| 6 | 343660 | 359997 | 376224 | 392337 | 408331 | 424199 | 439939 | 455545 | 471012 | 486335 | 54 |
| 7 | 343933 | 360268 | 376494 | 392605 | 408596 | 424463 | 440200 | 455804 | 471269 | 486590 | 53 |
| 8 | 344206 | 360540 | 376763 | 392872 | 408862 | 424726 | 440462 | 456063 | 471525 | 486844 | 52 |
| 9 | 344479 | 360811 | 377033 | 393140 | 409127 | 424990 | 440723 | 456322 | 471782 | 487098 | 51 |
| 10 | 344752 | 361082 | 377302 | 393407 | 409392 | 425253 | 440984 | 456580 | 472038 | 487352 | 50 |
| 11 | 345025 | 361353 | 377571 | 393675 | 409658 | 425516 | 441245 | 456839 | 472294 | 487606 | 49 |
| 12 | 345298 | 361625 | 377841 | 393942 | 409923 | 425779 | 441506 | 457098 | 472551 | 487860 | 48 |
| 13 | 345571 | 361896 | 378110 | 394209 | 410188 | 426043 | 441767 | 457357 | 472807 | 488114 | 47 |
| 14 | 345844 | 362167 | 378379 | 394477 | 410454 | 426306 | 442028 | 457615 | 473063 | 488367 | 46 |
| 15 | 346117 | 362438 | 378649 | 394744 | 410719 | 426569 | 442289 | 457874 | 473320 | 488621 | 45 |
| 16 | 346390 | 362709 | 378918 | 395011 | 410984 | 426832 | 442550 | 458133 | 473576 | 488875 | 44 |
| 17 | 346663 | 362980 | 379187 | 395278 | 411249 | 427095 | 442810 | 458391 | 473832 | 489129 | 43 |
| 18 | 346936 | 363251 | 379456 | 395546 | 411514 | 427358 | 443071 | 458650 | 474088 | 489383 | 42 |
| 19 | 347209 | 363522 | 379725 | 395813 | 411780 | 427621 | 443332 | 458908 | 474344 | 489636 | 41 |
| 20 | 347481 | 363793 | 379994 | 396080 | 412045 | 427884 | 443593 | 459167 | 474600 | 489890 | 40 |
| 21 | 347754 | 364064 | 380263 | 396347 | 412310 | 428147 | 443853 | 459425 | 474856 | 490143 | 39 |
| 22 | 348027 | 364335 | 380532 | 396614 | 412575 | 428410 | 444114 | 459683 | 475112 | 490397 | 38 |
| 23 | 348299 | 364606 | 380801 | 396881 | 412840 | 428672 | 444375 | 459942 | 475368 | 490650 | 37 |
| 24 | 348572 | 364877 | 381070 | 397148 | 413104 | 428935 | 444635 | 460200 | 475624 | 490904 | 36 |
| 25 | 348843 | 365148 | 381339 | 397415 | 413369 | 429198 | 444896 | 460458 | 475880 | 491157 | 35 |
| 26 | 349117 | 365418 | 381608 | 397682 | 413634 | 429461 | 445156 | 460716 | 476136 | 491411 | 34 |
| 27 | 349390 | 365689 | 381877 | 397949 | 413899 | 429723 | 445417 | 460974 | 476392 | 491664 | 33 |
| 28 | 349662 | 365960 | 382146 | 398216 | 414164 | 429986 | 445677 | 461233 | 476647 | 491917 | 32 |
| 29 | 349935 | 366231 | 382415 | 398482 | 414429 | 430249 | 445938 | 461491 | 476903 | 492170 | 31 |
| 30 | 350207 | 366501 | 382683 | 398749 | 414693 | 430511 | 446198 | 461749 | 477159 | 492424 | 30 |
| 31 | 350480 | 366772 | 382952 | 399016 | 414958 | 430774 | 446458 | 462007 | 477414 | 492677 | 29 |
| 32 | 350752 | 367043 | 383221 | 399283 | 415223 | 431036 | 446718 | 462265 | 477670 | 492930 | 28 |
| 33 | 351025 | 367313 | 383490 | 399549 | 415487 | 431299 | 446979 | 462523 | 477926 | 493183 | 27 |
| 34 | 351297 | 367584 | 383758 | 399816 | 415752 | 431561 | 447239 | 462781 | 478181 | 493436 | 26 |
| 35 | 351569 | 367854 | 384027 | 400083 | 416016 | 431823 | 447499 | 463038 | 478436 | 493689 | 25 |
| 36 | 351842 | 368125 | 384295 | 400349 | 416281 | 432086 | 447759 | 463296 | 478692 | 493942 | 24 |
| 37 | 352114 | 368395 | 384564 | 400616 | 416545 | 432348 | 448019 | 463554 | 478947 | 494195 | 23 |
| 38 | 352386 | 368665 | 384832 | 400882 | 416810 | 432610 | 448279 | 463812 | 479203 | 494448 | 22 |
| 39 | 352658 | 368936 | 385101 | 401149 | 417074 | 432873 | 448539 | 464069 | 479458 | 494701 | 21 |
| 40 | 352931 | 369206 | 385369 | 401415 | 417339 | 433135 | 448799 | 464327 | 479713 | 494953 | 20 |
| 41 | 353203 | 369477 | 385638 | 401681 | 417603 | 433397 | 449059 | 464585 | 479968 | 495206 | 19 |
| 42 | 353475 | 369747 | 385906 | 401948 | 417867 | 433659 | 449319 | 464842 | 480224 | 495459 | 18 |
| 43 | 353747 | 370017 | 386174 | 402214 | 418131 | 433921 | 449579 | 465100 | 480479 | 495711 | 17 |
| 44 | 354019 | 370287 | 386443 | 402480 | 418396 | 434183 | 449839 | 465357 | 480734 | 495964 | 16 |
| 45 | 354291 | 370557 | 386711 | 402747 | 418660 | 434445 | 450098 | 465615 | 480989 | 496217 | 15 |
| 46 | 354563 | 370828 | 386979 | 403013 | 418924 | 434707 | 450358 | 465872 | 481244 | 496469 | 14 |
| 47 | 354835 | 371098 | 387247 | 403279 | 419188 | 434969 | 450618 | 466129 | 481499 | 496722 | 13 |
| 48 | 355107 | 371368 | 387516 | 403545 | 419452 | 435231 | 450878 | 466387 | 481754 | 496974 | 12 |
| 49 | 355379 | 371638 | 387784 | 403811 | 419716 | 435493 | 451137 | 466644 | 482009 | 497226 | 11 |
| 50 | 355651 | 371908 | 388052 | 404078 | 419980 | 435755 | 451397 | 466901 | 482263 | 497479 | 10 |
| 51 | 355923 | 372178 | 388320 | 404344 | 420244 | 436017 | 451656 | 467158 | 482518 | 497731 | 9 |
| 52 | 356194 | 372448 | 388588 | 404610 | 420508 | 436278 | 451916 | 467416 | 482773 | 497983 | 8 |
| 53 | 356466 | 372718 | 388856 | 404876 | 420772 | 436540 | 452175 | 467673 | 483028 | 498236 | 7 |
| 54 | 356738 | 372988 | 389124 | 405142 | 421036 | 436802 | 452435 | 467930 | 483282 | 498488 | 6 |
| 55 | 357010 | 373258 | 389392 | 405408 | 421300 | 437063 | 452694 | 468187 | 483537 | 498740 | 5 |
| 56 | 357281 | 373528 | 389660 | 405673 | 421563 | 437325 | 452954 | 468444 | 483792 | 498992 | 4 |
| 57 | 357553 | 373797 | 389928 | 405939 | 421827 | 437587 | 453213 | 468701 | 484046 | 499244 | 3 |
| 58 | 357825 | 374067 | 390196 | 406205 | 422091 | 437848 | 453472 | 468958 | 484301 | 499496 | 2 |
| 59 | 358096 | 374337 | 390463 | 406471 | 422355 | 438110 | 453731 | 469215 | 484555 | 499748 | 1 |
| 60 | 358368 | 374607 | 390731 | 406737 | 422618 | 438371 | 453991 | 469472 | 484810 | 500000 | 0 |
| M | 69° | 68° | 67° | 66° | 65° | 64° | 63° | 62° | 61° | 60° | M |

NATURAL CO-SINES.

| M | 30° | 31° | 32° | 33° | 34° | 35° | 36° | 37° | 38° | 39° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 500000 | 515038 | 529919 | 544639 | 559193 | 573576 | 587785 | 601815 | 615662 | 629320 | 60 |
| 1 | 500252 | 515287 | 530166 | 544883 | 559434 | 573815 | 588021 | 602047 | 615891 | 629546 | 59 |
| 2 | 500504 | 515537 | 530413 | 545127 | 559675 | 574053 | 588256 | 602280 | 616120 | 629772 | 58 |
| 3 | 500756 | 515786 | 530659 | 545371 | 559916 | 574291 | 588491 | 602512 | 616349 | 629998 | 57 |
| 4 | 501007 | 516035 | 530906 | 545615 | 560157 | 574529 | 588726 | 602744 | 616578 | 630224 | 56 |
| 5 | 501259 | 516284 | 531152 | 545858 | 560398 | 574767 | 588961 | 602976 | 616807 | 630450 | 55 |
| 6 | 501511 | 516533 | 531399 | 546102 | 560639 | 575005 | 589196 | 603208 | 617036 | 630676 | 54 |
| 7 | 501762 | 516782 | 531645 | 546346 | 560880 | 575243 | 589431 | 603440 | 617265 | 630902 | 53 |
| 8 | 502014 | 517031 | 531891 | 546589 | 561121 | 575481 | 589666 | 603672 | 617494 | 631127 | 52 |
| 9 | 502266 | 517280 | 532138 | 546833 | 561361 | 575719 | 589901 | 603904 | 617722 | 631353 | 51 |
| 10 | 502517 | 517529 | 532384 | 547076 | 561602 | 575957 | 590136 | 604136 | 617951 | 631578 | 50 |
| 11 | 502769 | 517778 | 532630 | 547320 | 561843 | 576195 | 590371 | 604367 | 618180 | 631804 | 49 |
| 12 | 503020 | 518027 | 532876 | 547563 | 562083 | 576432 | 590606 | 604599 | 618408 | 632029 | 48 |
| 13 | 503271 | 518276 | 533122 | 547807 | 562324 | 576670 | 590840 | 604831 | 618637 | 632255 | 47 |
| 14 | 503523 | 518525 | 533369 | 548050 | 562565 | 576908 | 591075 | 605062 | 618866 | 632480 | 46 |
| 15 | 503774 | 518773 | 533615 | 548293 | 562805 | 577145 | 591310 | 605294 | 619094 | 632705 | 45 |
| 16 | 504025 | 519022 | 533861 | 548537 | 563045 | 577383 | 591544 | 605526 | 619322 | 632931 | 44 |
| 17 | 504277 | 519271 | 534107 | 548780 | 563286 | 577620 | 591779 | 605757 | 619551 | 633156 | 43 |
| 18 | 504528 | 519519 | 534352 | 549023 | 563526 | 577858 | 592013 | 605988 | 619779 | 633381 | 42 |
| 19 | 504779 | 519768 | 534598 | 549266 | 563766 | 578095 | 592248 | 606220 | 620007 | 633606 | 41 |
| 20 | 505030 | 520016 | 534844 | 549509 | 564007 | 578332 | 592482 | 606451 | 620236 | 633831 | 40 |
| 21 | 505281 | 520265 | 535090 | 549752 | 564247 | 578570 | 592716 | 606682 | 620464 | 634056 | 39 |
| 22 | 505532 | 520513 | 535336 | 549995 | 564487 | 578807 | 592951 | 606914 | 620692 | 634281 | 38 |
| 23 | 505783 | 520761 | 535581 | 550238 | 564727 | 579044 | 593185 | 607145 | 620920 | 634506 | 37 |
| 24 | 506034 | 521010 | 535827 | 550481 | 564967 | 579281 | 593419 | 607376 | 621148 | 634731 | 36 |
| 25 | 506285 | 521258 | 536072 | 550724 | 565207 | 579518 | 593653 | 607607 | 621376 | 634955 | 35 |
| 26 | 506536 | 521506 | 536318 | 550966 | 565447 | 579755 | 593887 | 607838 | 621604 | 635180 | 34 |
| 27 | 506786 | 521754 | 536563 | 551209 | 565687 | 579992 | 594121 | 608069 | 621831 | 635405 | 33 |
| 28 | 507037 | 522002 | 536809 | 551452 | 565927 | 580229 | 594355 | 608300 | 622059 | 635629 | 32 |
| 29 | 507288 | 522251 | 537054 | 551694 | 566167 | 580466 | 594589 | 608531 | 622287 | 635854 | 31 |
| 30 | 507538 | 522499 | 537300 | 551937 | 566406 | 580703 | 594823 | 608761 | 622515 | 636078 | 30 |
| 31 | 507789 | 522747 | 537545 | 552180 | 566646 | 580940 | 595057 | 608992 | 622742 | 636303 | 29 |
| 32 | 508040 | 522995 | 537790 | 552422 | 566886 | 581177 | 595290 | 609223 | 622970 | 636527 | 28 |
| 33 | 508290 | 523242 | 538035 | 552665 | 567125 | 581413 | 595524 | 609454 | 623197 | 636751 | 27 |
| 34 | 508541 | 523490 | 538281 | 552907 | 567365 | 581650 | 595758 | 609684 | 623425 | 636976 | 26 |
| 35 | 508791 | 523738 | 538526 | 553149 | 567604 | 581886 | 595991 | 609915 | 623652 | 637200 | 25 |
| 36 | 509041 | 523986 | 538771 | 553392 | 567844 | 582123 | 596225 | 610145 | 623880 | 637424 | 24 |
| 37 | 509292 | 524234 | 539016 | 553634 | 568083 | 582360 | 596458 | 610376 | 624107 | 637648 | 23 |
| 38 | 509542 | 524481 | 539261 | 553876 | 568323 | 582596 | 596692 | 610606 | 624334 | 637872 | 22 |
| 39 | 509792 | 524729 | 539506 | 554118 | 568562 | 582832 | 596925 | 610836 | 624561 | 638096 | 21 |
| 40 | 510043 | 524977 | 539751 | 554360 | 568801 | 583069 | 597159 | 611067 | 624789 | 638320 | 20 |
| 41 | 510293 | 525224 | 539996 | 554602 | 569040 | 583305 | 597392 | 611297 | 625016 | 638545 | 19 |
| 42 | 510543 | 525472 | 540240 | 554844 | 569280 | 583541 | 597625 | 611527 | 625243 | 638768 | 18 |
| 43 | 510793 | 525719 | 540485 | 555086 | 569519 | 583777 | 597858 | 611757 | 625470 | 638992 | 17 |
| 44 | 511043 | 525967 | 540730 | 555328 | 569758 | 584014 | 598092 | 611987 | 625697 | 639215 | 16 |
| 45 | 511293 | 526214 | 540975 | 555570 | 569997 | 584250 | 598325 | 612217 | 625924 | 639439 | 15 |
| 46 | 511543 | 526461 | 541219 | 555812 | 570236 | 584486 | 598558 | 612447 | 626150 | 639663 | 14 |
| 47 | 511793 | 526709 | 541464 | 556054 | 570475 | 584722 | 598791 | 612677 | 626377 | 639886 | 13 |
| 48 | 512043 | 526956 | 541708 | 556296 | 570714 | 584958 | 599024 | 612907 | 626604 | 640110 | 12 |
| 49 | 512293 | 527203 | 541953 | 556537 | 570952 | 585194 | 599257 | 613137 | 626831 | 640333 | 11 |
| 50 | 512543 | 527450 | 542197 | 556779 | 571192 | 585429 | 599489 | 613367 | 627057 | 640557 | 10 |
| 51 | 512792 | 527697 | 542442 | 557021 | 571430 | 585665 | 599722 | 613596 | 627284 | 640780 | 9 |
| 52 | 513042 | 527944 | 542686 | 557262 | 571669 | 585901 | 599955 | 613826 | 627510 | 641003 | 8 |
| 53 | 513292 | 528191 | 542930 | 557504 | 571907 | 586137 | 600188 | 614056 | 627737 | 641226 | 7 |
| 54 | 513541 | 528438 | 543174 | 557745 | 572146 | 586372 | 600420 | 614285 | 627963 | 641450 | 6 |
| 55 | 513791 | 528685 | 543419 | 557986 | 572384 | 586608 | 600653 | 614515 | 628189 | 641673 | 5 |
| 56 | 514040 | 528932 | 543663 | 558228 | 572623 | 586844 | 600885 | 614744 | 628416 | 641896 | 4 |
| 57 | 514290 | 529179 | 543907 | 558469 | 572861 | 587079 | 601118 | 614974 | 628642 | 642119 | 3 |
| 58 | 514539 | 529426 | 544151 | 558711 | 573100 | 587315 | 601350 | 615203 | 628868 | 642342 | 2 |
| 59 | 514789 | 529673 | 544395 | 558952 | 573338 | 587550 | 601583 | 615432 | 629094 | 642565 | 1 |
| 60 | 515038 | 529919 | 544639 | 559193 | 573576 | 587785 | 601815 | 615662 | 629320 | 642788 | 0 |
| M | 59° | 58° | 57° | 56° | 55° | 54° | 53° | 52° | 51° | 50° | M |

NATURAL CO-SINES.

| M | 40° | 41° | 42° | 43° | 44° | 45° | 46° | 47° | 48° | 49° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 642788 | 656059 | 669131 | 681998 | 694658 | 707107 | 719340 | 731354 | 743145 | 754710 | 60 |
| 1 | 643010 | 656279 | 669347 | 682211 | 694868 | 707312 | 719542 | 731552 | 743339 | 754900 | 59 |
| 2 | 643233 | 656498 | 669563 | 682424 | 695077 | 707518 | 719744 | 731750 | 743534 | 755091 | 58 |
| 3 | 643456 | 656717 | 669779 | 682636 | 695286 | 707724 | 719946 | 731949 | 743729 | 755282 | 57 |
| 4 | 643679 | 656937 | 669995 | 682849 | 695495 | 707929 | 720148 | 732147 | 743923 | 755472 | 56 |
| 5 | 643901 | 657156 | 670211 | 683061 | 695704 | 708135 | 720349 | 732345 | 744117 | 755663 | 55 |
| 6 | 644124 | 657375 | 670427 | 683274 | 695913 | 708340 | 720551 | 732543 | 744312 | 755854 | 54 |
| 7 | 644346 | 657594 | 670642 | 683486 | 696122 | 708545 | 720753 | 732741 | 744506 | 756044 | 53 |
| 8 | 644569 | 657814 | 670858 | 683698 | 696331 | 708750 | 720954 | 732939 | 744700 | 756234 | 52 |
| 9 | 644791 | 658033 | 671074 | 683911 | 696539 | 708956 | 721156 | 733137 | 744894 | 756425 | 51 |
| 10 | 645013 | 658252 | 671290 | 684123 | 696748 | 709161 | 721357 | 733335 | 745088 | 756615 | 50 |
| 11 | 645236 | 658471 | 671505 | 684335 | 696957 | 709366 | 721559 | 733532 | 745282 | 756805 | 49 |
| 12 | 645458 | 658690 | 671721 | 684547 | 697165 | 709574 | 721760 | 733730 | 745476 | 756995 | 48 |
| 13 | 645680 | 658908 | 671936 | 684759 | 697374 | 709776 | 721962 | 733928 | 745670 | 757185 | 47 |
| 14 | 645902 | 659127 | 672152 | 684971 | 697582 | 709981 | 722163 | 734125 | 745864 | 757375 | 46 |
| 15 | 646124 | 659346 | 672367 | 685183 | 697791 | 710185 | 722364 | 734323 | 746057 | 757565 | 45 |
| 16 | 646346 | 659565 | 672582 | 685395 | 697999 | 710390 | 722565 | 734520 | 746252 | 757755 | 44 |
| 17 | 646568 | 659783 | 672797 | 685607 | 698207 | 710595 | 722766 | 734717 | 746445 | 757945 | 43 |
| 18 | 646790 | 660002 | 673013 | 685818 | 698415 | 710800 | 722967 | 734915 | 746638 | 758134 | 42 |
| 19 | 647012 | 660220 | 673228 | 686030 | 698623 | 711004 | 723168 | 735112 | 746832 | 758324 | 41 |
| 20 | 647233 | 660439 | 673443 | 686242 | 698832 | 711209 | 723369 | 735309 | 747025 | 758514 | 40 |
| 21 | 647455 | 660657 | 673658 | 686453 | 699040 | 711413 | 723570 | 735506 | 747218 | 758703 | 39 |
| 22 | 647677 | 660875 | 673873 | 686665 | 699248 | 711617 | 723771 | 735703 | 747412 | 758893 | 38 |
| 23 | 647898 | 661094 | 674088 | 686876 | 699456 | 711822 | 723971 | 735900 | 747605 | 759082 | 37 |
| 24 | 648120 | 661312 | 674302 | 687088 | 699663 | 712026 | 724172 | 736097 | 747798 | 759271 | 36 |
| 25 | 648341 | 661530 | 674517 | 687299 | 699871 | 712230 | 724372 | 736294 | 747991 | 759461 | 35 |
| 26 | 648563 | 661748 | 674732 | 687510 | 700079 | 712434 | 724573 | 736491 | 748184 | 759650 | 34 |
| 27 | 648784 | 661966 | 674947 | 687721 | 700287 | 712639 | 724773 | 736688 | 748377 | 759839 | 33 |
| 28 | 649006 | 662184 | 675161 | 687933 | 700494 | 712843 | 724974 | 736884 | 748570 | 760028 | 32 |
| 29 | 649227 | 662402 | 675376 | 688144 | 700702 | 713047 | 725174 | 737081 | 748763 | 760217 | 31 |
| 30 | 649448 | 662620 | 675590 | 688355 | 700909 | 713251 | 725374 | 737277 | 748956 | 760406 | 30 |
| 31 | 649669 | 662838 | 675805 | 688566 | 701117 | 713454 | 725575 | 737474 | 749148 | 760595 | 29 |
| 32 | 649890 | 663056 | 676019 | 688777 | 701324 | 713658 | 725775 | 737670 | 749341 | 760784 | 28 |
| 33 | 650111 | 663273 | 676233 | 688987 | 701531 | 713862 | 725975 | 737867 | 749534 | 760972 | 27 |
| 34 | 650332 | 663491 | 676448 | 689198 | 701739 | 714066 | 726175 | 738063 | 749726 | 761161 | 26 |
| 35 | 650553 | 663709 | 676662 | 689409 | 701946 | 714269 | 726375 | 738259 | 749919 | 761350 | 25 |
| 36 | 650774 | 663926 | 676876 | 689620 | 702153 | 714473 | 726575 | 738455 | 750111 | 761538 | 24 |
| 37 | 650995 | 664144 | 677090 | 689830 | 702360 | 714676 | 726775 | 738652 | 750303 | 761727 | 23 |
| 38 | 651216 | 664361 | 677304 | 690041 | 702567 | 714880 | 726974 | 738848 | 750496 | 761915 | 22 |
| 39 | 651437 | 664579 | 677518 | 690251 | 702774 | 715083 | 727174 | 739044 | 750688 | 762104 | 21 |
| 40 | 651657 | 664796 | 677732 | 690462 | 702981 | 715286 | 727374 | 739239 | 750880 | 762292 | 20 |
| 41 | 651878 | 665013 | 677946 | 690672 | 703188 | 715490 | 727573 | 739435 | 751072 | 762480 | 19 |
| 42 | 652098 | 665230 | 678160 | 690882 | 703395 | 715693 | 727773 | 739631 | 751264 | 762668 | 18 |
| 43 | 652319 | 665448 | 678373 | 691093 | 703601 | 715896 | 727972 | 739827 | 751456 | 762856 | 17 |
| 44 | 652539 | 665665 | 678587 | 691303 | 703808 | 716099 | 728172 | 740023 | 751648 | 763044 | 16 |
| 45 | 652760 | 665882 | 678801 | 691513 | 704015 | 716302 | 728371 | 740218 | 751840 | 763233 | 15 |
| 46 | 652980 | 666099 | 679014 | 691723 | 704221 | 716505 | 728570 | 740414 | 752032 | 763420 | 14 |
| 47 | 653200 | 666316 | 679228 | 691933 | 704428 | 716708 | 728770 | 740609 | 752223 | 763608 | 13 |
| 48 | 653421 | 666533 | 679441 | 692143 | 704634 | 716911 | 728969 | 740805 | 752415 | 763796 | 12 |
| 49 | 653641 | 666749 | 679655 | 692353 | 704841 | 717113 | 729168 | 741000 | 752606 | 763984 | 11 |
| 50 | 653861 | 666966 | 679868 | 692563 | 705047 | 717316 | 729367 | 741195 | 752798 | 764171 | 10 |
| 51 | 654081 | 667183 | 680081 | 692773 | 705253 | 717519 | 729566 | 741391 | 752989 | 764359 | 9 |
| 52 | 654301 | 667399 | 680295 | 692983 | 705459 | 717721 | 729765 | 741586 | 753181 | 764547 | 8 |
| 53 | 654521 | 667616 | 680508 | 693192 | 705666 | 717924 | 729964 | 741781 | 753372 | 764734 | 7 |
| 54 | 654741 | 667833 | 680721 | 693402 | 705872 | 718126 | 730162 | 741976 | 753563 | 764921 | 6 |
| 55 | 654961 | 668049 | 680934 | 693611 | 706078 | 718329 | 730361 | 742171 | 753755 | 765109 | 5 |
| 56 | 655180 | 668266 | 681147 | 693821 | 706284 | 718531 | 730560 | 742366 | 753946 | 765296 | 4 |
| 57 | 655400 | 668482 | 681360 | 694030 | 706489 | 718733 | 730758 | 742561 | 754137 | 765483 | 3 |
| 58 | 655620 | 668398 | 681573 | 694240 | 706695 | 718936 | 730957 | 742755 | 754328 | 765670 | 2 |
| 59 | 655840 | 668914 | 681786 | 694449 | 706901 | 719138 | 731155 | 742950 | 754519 | 765857 | 1 |
| 60 | 656059 | 669131 | 681998 | 694658 | 707107 | 719340 | 731354 | 743145 | 754710 | 766044 | |
| M | 49° | 48° | 47° | 46° | 45° | 44° | 43° | 42° | 41° | 40° | |

NATURAL CO-SINES.

| M | 50° | 51° | 52° | 53° | 54° | 55° | 56° | 57° | 58° | 59° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 766044 | 777140 | 788011 | 798636 | 809017 | 819152 | 829038 | 838671 | 848048 | 857167 | 60 |
| 1 | 766231 | 777329 | 788190 | 798811 | 809188 | 819319 | 829200 | 838829 | 848202 | 857317 | 59 |
| 2 | 766418 | 777512 | 788369 | 798986 | 809359 | 819486 | 829363 | 838987 | 848356 | 857467 | 58 |
| 3 | 766605 | 777695 | 788548 | 799160 | 809530 | 819652 | 829525 | 839146 | 848510 | 857616 | 57 |
| 4 | 766792 | 777878 | 788727 | 799335 | 809700 | 819819 | 829688 | 839304 | 848664 | 857766 | 56 |
| 5 | 766979 | 778060 | 788905 | 799510 | 809871 | 819985 | 829850 | 839462 | 848818 | 857916 | 55 |
| 6 | 767165 | 778243 | 789084 | 799685 | 810042 | 820152 | 830012 | 839620 | 848972 | 858065 | 54 |
| 7 | 767352 | 778426 | 789263 | 799860 | 810212 | 820318 | 830175 | 839778 | 849125 | 858214 | 53 |
| 8 | 767538 | 778608 | 789441 | 800034 | 810383 | 820485 | 830337 | 839936 | 849279 | 858364 | 52 |
| 9 | 767725 | 778791 | 789620 | 800208 | 810553 | 820651 | 830499 | 840094 | 849433 | 858513 | 51 |
| 10 | 767911 | 778973 | 789798 | 800383 | 810723 | 820817 | 830661 | 840251 | 849586 | 858662 | 50 |
| 11 | 768097 | 779156 | 789977 | 800557 | 810894 | 820983 | 830823 | 840409 | 849739 | 858811 | 49 |
| 12 | 768284 | 779338 | 790155 | 800731 | 811064 | 821149 | 830988 | 840567 | 849893 | 858960 | 48 |
| 13 | 768470 | 779520 | 790333 | 800906 | 811234 | 821315 | 831146 | 840724 | 850046 | 859109 | 47 |
| 14 | 768656 | 779702 | 790512 | 801080 | 811404 | 821481 | 831308 | 840882 | 850199 | 859258 | 46 |
| 15 | 768842 | 779885 | 790690 | 801254 | 811574 | 821647 | 831470 | 841039 | 850352 | 859406 | 45 |
| 16 | 769028 | 780067 | 790868 | 801428 | 811744 | 821813 | 831631 | 841196 | 850505 | 859555 | 44 |
| 17 | 769214 | 780249 | 791046 | 801602 | 811914 | 821978 | 831793 | 841354 | 850658 | 859704 | 43 |
| 18 | 769399 | 780430 | 791224 | 801776 | 812084 | 822144 | 831954 | 841511 | 850811 | 859852 | 42 |
| 19 | 769585 | 780612 | 791401 | 801950 | 812253 | 822310 | 832116 | 841668 | 850964 | 860001 | 41 |
| 20 | 769771 | 780794 | 791579 | 802123 | 812423 | 822475 | 832277 | 841825 | 851117 | 860149 | 40 |
| 21 | 769957 | 780976 | 791757 | 802297 | 812593 | 822641 | 832438 | 841982 | 851269 | 860298 | 39 |
| 22 | 770142 | 781157 | 791935 | 802471 | 812762 | 822806 | 832599 | 842139 | 851422 | 860446 | 38 |
| 23 | 770328 | 781339 | 792112 | 802644 | 812931 | 822971 | 832760 | 842296 | 851575 | 860594 | 37 |
| 24 | 770513 | 781521 | 792290 | 802818 | 813101 | 823136 | 832921 | 842452 | 851727 | 860742 | 36 |
| 25 | 770699 | 781702 | 792467 | 802991 | 813270 | 823302 | 833082 | 842609 | 851879 | 860890 | 35 |
| 26 | 770884 | 781883 | 792645 | 803164 | 813439 | 823467 | 833243 | 842766 | 852032 | 861038 | 34 |
| 27 | 771069 | 782065 | 792822 | 803338 | 813608 | 823632 | 833404 | 842922 | 852184 | 861186 | 33 |
| 28 | 771254 | 782246 | 792999 | 803511 | 813778 | 823797 | 833565 | 843079 | 852336 | 861334 | 32 |
| 29 | 771440 | 782427 | 793176 | 803684 | 813947 | 823961 | 833725 | 843235 | 852489 | 861482 | 31 |
| 30 | 771625 | 782608 | 793353 | 803857 | 814116 | 824126 | 833886 | 843391 | 852640 | 861629 | 30 |
| 31 | 771810 | 782789 | 793530 | 804030 | 814284 | 824291 | 834046 | 843548 | 852792 | 861777 | 29 |
| 32 | 771995 | 782970 | 793707 | 804203 | 814453 | 824456 | 834207 | 843704 | 852944 | 861924 | 28 |
| 33 | 772179 | 783151 | 793884 | 804376 | 814622 | 824620 | 834367 | 843860 | 853096 | 862072 | 27 |
| 34 | 772364 | 783332 | 794061 | 804548 | 814791 | 824785 | 834528 | 844016 | 853248 | 862219 | 26 |
| 35 | 772549 | 783513 | 794238 | 804721 | 814959 | 824949 | 834688 | 844172 | 853399 | 862366 | 25 |
| 36 | 772734 | 783694 | 794415 | 804894 | 815128 | 825114 | 834848 | 844328 | 853551 | 862514 | 24 |
| 37 | 772918 | 783874 | 794591 | 805066 | 815296 | 825278 | 835008 | 844484 | 853702 | 862661 | 23 |
| 38 | 773103 | 784055 | 794768 | 805239 | 815465 | 825442 | 835168 | 844640 | 853854 | 862808 | 22 |
| 39 | 773287 | 784235 | 794944 | 805411 | 815633 | 825606 | 835328 | 844795 | 854005 | 862955 | 21 |
| 40 | 773472 | 784416 | 795121 | 805584 | 815801 | 825770 | 835488 | 844951 | 854156 | 863102 | 20 |
| 41 | 773656 | 784596 | 795297 | 805756 | 815970 | 825934 | 835648 | 845106 | 854308 | 863249 | 19 |
| 42 | 773840 | 784776 | 795474 | 805928 | 816138 | 826098 | 835807 | 845262 | 854459 | 863396 | 18 |
| 43 | 774024 | 784957 | 795650 | 806101 | 816306 | 826262 | 835967 | 845417 | 854610 | 863542 | 17 |
| 44 | 774209 | 785137 | 795826 | 806273 | 816474 | 826426 | 836127 | 845573 | 854761 | 863689 | 16 |
| 45 | 774393 | 785317 | 796002 | 806445 | 816642 | 826590 | 836286 | 845728 | 854912 | 863836 | 15 |
| 46 | 774577 | 785497 | 796178 | 806617 | 816809 | 826753 | 836446 | 845883 | 855063 | 863982 | 14 |
| 47 | 774761 | 785677 | 796354 | 806789 | 816977 | 826917 | 836605 | 846038 | 855214 | 864128 | 13 |
| 48 | 774945 | 785857 | 796530 | 806960 | 817145 | 827081 | 836764 | 846193 | 855364 | 864275 | 12 |
| 49 | 775128 | 786037 | 796706 | 807132 | 817313 | 827244 | 836924 | 846348 | 855515 | 864421 | 11 |
| 50 | 775312 | 786217 | 796882 | 807304 | 817480 | 827407 | 837083 | 846503 | 855666 | 864567 | 10 |
| 51 | 775496 | 786396 | 797057 | 807475 | 817648 | 827571 | 837242 | 846658 | 855816 | 864713 | 9 |
| 52 | 775679 | 786576 | 797233 | 807647 | 817815 | 827734 | 837401 | 846813 | 855966 | 864860 | 8 |
| 53 | 775863 | 786756 | 797408 | 807819 | 817982 | 827897 | 837560 | 846967 | 856117 | 865006 | 7 |
| 54 | 776046 | 786935 | 797584 | 807990 | 818150 | 828060 | 837719 | 847122 | 856267 | 865151 | 6 |
| 55 | 776230 | 787115 | 797759 | 808161 | 818317 | 828223 | 837878 | 847277 | 856417 | 865297 | 5 |
| 56 | 776413 | 787294 | 797935 | 808332 | 818484 | 828386 | 838036 | 847431 | 856567 | 865443 | 4 |
| 57 | 776597 | 787473 | 798110 | 808504 | 818651 | 828549 | 838195 | 847585 | 856718 | 865589 | 3 |
| 58 | 776780 | 787652 | 798285 | 808675 | 818818 | 828712 | 838354 | 847740 | 856868 | 865734 | 2 |
| 59 | 776963 | 787832 | 798460 | 808846 | 818985 | 828875 | 838512 | 847894 | 857017 | 865880 | 1 |
| 60 | 777146 | 788011 | 798636 | 809017 | 819152 | 829038 | 838671 | 848048 | 857167 | 866025 | 0 |
| M | 39° | 38° | 37° | 36° | 35° | 34° | 33° | 32° | 31° | 30° | M |

NATURAL CO-SINES.

| M | 60° | 61° | 62° | 63° | 64° | 65° | 66° | 67° | 68° | 69° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 866025 | 874620 | 882948 | 891007 | 898794 | 906308 | 913546 | 920505 | 927184 | 933580 | 60 |
| 1 | 866171 | 874761 | 883084 | 891139 | 898922 | 906431 | 913664 | 920619 | 927293 | 933685 | 59 |
| 2 | 866316 | 874902 | 883221 | 891271 | 899049 | 906554 | 913782 | 920732 | 927402 | 933789 | 58 |
| 3 | 866461 | 875043 | 883357 | 891402 | 899176 | 906676 | 913900 | 920846 | 927510 | 933893 | 57 |
| 4 | 866607 | 875183 | 883493 | 891534 | 899304 | 906799 | 914018 | 920959 | 927619 | 933997 | 56 |
| 5 | 866752 | 875324 | 883630 | 891666 | 899431 | 906922 | 914136 | 921072 | 927728 | 934101 | 55 |
| 6 | 866897 | 875465 | 883766 | 891798 | 899558 | 907044 | 914254 | 921185 | 927836 | 934205 | 54 |
| 7 | 867042 | 875605 | 883902 | 891929 | 899685 | 907167 | 914372 | 921299 | 927945 | 934308 | 53 |
| 8 | 867187 | 875746 | 884038 | 892061 | 899812 | 907289 | 914490 | 921412 | 928053 | 934412 | 52 |
| 9 | 867331 | 875886 | 884174 | 892192 | 899939 | 907411 | 914607 | 921525 | 928161 | 934515 | 51 |
| 10 | 867476 | 876026 | 884310 | 892323 | 900065 | 907533 | 914725 | 921638 | 928270 | 934619 | 50 |
| 11 | 867621 | 876167 | 884445 | 892455 | 900192 | 907655 | 914842 | 921750 | 928378 | 934722 | 49 |
| 12 | 867766 | 876307 | 884581 | 892586 | 900319 | 907778 | 914960 | 921863 | 928486 | 934826 | 48 |
| 13 | 867910 | 876447 | 884717 | 892717 | 900445 | 907900 | 915077 | 921976 | 928594 | 934929 | 47 |
| 14 | 868054 | 876587 | 884852 | 892848 | 900572 | 908021 | 915194 | 922088 | 928702 | 935032 | 46 |
| 15 | 868199 | 876727 | 884988 | 892979 | 900699 | 908143 | 915312 | 922201 | 928810 | 935135 | 45 |
| 16 | 868343 | 876867 | 885123 | 893110 | 900825 | 908265 | 915429 | 922313 | 928917 | 935238 | 44 |
| 17 | 868487 | 877006 | 885258 | 893241 | 900951 | 908387 | 915546 | 922426 | 929025 | 935341 | 43 |
| 18 | 868632 | 877146 | 885394 | 893371 | 901077 | 908508 | 915663 | 922538 | 929133 | 935444 | 42 |
| 19 | 868776 | 877286 | 885529 | 893502 | 901203 | 908630 | 915780 | 922650 | 929240 | 935547 | 41 |
| 20 | 868920 | 877425 | 885664 | 893633 | 901329 | 908751 | 915896 | 922762 | 929348 | 935650 | 40 |
| 21 | 869064 | 877565 | 885799 | 893763 | 901455 | 908873 | 916013 | 922875 | 929455 | 935752 | 39 |
| 22 | 869207 | 877704 | 885934 | 893894 | 901581 | 908994 | 916130 | 922987 | 929562 | 935855 | 38 |
| 23 | 869351 | 877844 | 886069 | 894024 | 901707 | 909115 | 916246 | 923098 | 929669 | 935957 | 37 |
| 24 | 869495 | 877983 | 886204 | 894154 | 901833 | 909236 | 916363 | 923210 | 929777 | 936060 | 36 |
| 25 | 869639 | 878122 | 886338 | 894284 | 901958 | 909357 | 916479 | 923322 | 929884 | 936162 | 35 |
| 26 | 869782 | 878261 | 886473 | 894415 | 902084 | 909478 | 916596 | 923434 | 929991 | 936264 | 34 |
| 27 | 869926 | 878400 | 886608 | 894545 | 902209 | 909599 | 916712 | 923545 | 930097 | 936366 | 33 |
| 28 | 870069 | 878539 | 886742 | 894675 | 902335 | 909720 | 916828 | 923657 | 930204 | 936468 | 32 |
| 29 | 870212 | 878678 | 886877 | 894805 | 902460 | 909841 | 916944 | 923768 | 930311 | 936570 | 31 |
| 30 | 870356 | 878817 | 887011 | 894934 | 902585 | 909961 | 917060 | 923880 | 930418 | 936672 | 30 |
| 31 | 870499 | 878956 | 887145 | 895064 | 902711 | 910082 | 917176 | 923991 | 930524 | 936774 | 29 |
| 32 | 870642 | 879095 | 887279 | 895194 | 902836 | 910202 | 917292 | 924102 | 930631 | 936876 | 28 |
| 33 | 870785 | 879233 | 887413 | 895323 | 902961 | 910323 | 917408 | 924213 | 930737 | 936977 | 27 |
| 34 | 870928 | 879372 | 887548 | 895453 | 903086 | 910443 | 917523 | 924324 | 930843 | 937079 | 26 |
| 35 | 871071 | 879510 | 887682 | 895582 | 903211 | 910564 | 917639 | 924435 | 930950 | 937181 | 25 |
| 36 | 871214 | 879649 | 887815 | 895712 | 903335 | 910684 | 917755 | 924546 | 931056 | 937282 | 24 |
| 37 | 871357 | 879787 | 887949 | 895841 | 903460 | 910804 | 917870 | 924657 | 931162 | 937383 | 23 |
| 38 | 871499 | 879925 | 888083 | 895970 | 903585 | 910924 | 917986 | 924768 | 931268 | 937485 | 22 |
| 39 | 871642 | 880063 | 888217 | 896099 | 903709 | 911044 | 918101 | 924878 | 931374 | 937586 | 21 |
| 40 | 871784 | 880201 | 888350 | 896229 | 903834 | 911164 | 918216 | 924989 | 931480 | 937687 | 20 |
| 41 | 871927 | 880339 | 888484 | 896358 | 903958 | 911284 | 918331 | 925099 | 931586 | 937788 | 19 |
| 42 | 872069 | 880477 | 888617 | 896486 | 904083 | 911403 | 918446 | 925210 | 931691 | 937889 | 18 |
| 43 | 872212 | 880615 | 888751 | 896615 | 904207 | 911523 | 918561 | 925320 | 931797 | 937990 | 17 |
| 44 | 872354 | 880753 | 888884 | 896744 | 904331 | 911643 | 918676 | 925430 | 931902 | 938091 | 16 |
| 45 | 872496 | 880891 | 889017 | 896873 | 904455 | 911762 | 918791 | 925541 | 932008 | 938191 | 15 |
| 46 | 872638 | 881028 | 889150 | 897001 | 904579 | 911882 | 918906 | 925651 | 932113 | 938292 | 14 |
| 47 | 872780 | 881166 | 889283 | 897130 | 904703 | 912001 | 919021 | 925761 | 932219 | 938393 | 13 |
| 48 | 872922 | 881304 | 889416 | 897258 | 904827 | 912120 | 919135 | 925871 | 932324 | 938493 | 12 |
| 49 | 873064 | 881441 | 889549 | 897387 | 904951 | 912239 | 919250 | 925981 | 932429 | 938593 | 11 |
| 50 | 873206 | 881578 | 889682 | 897515 | 905075 | 912358 | 919364 | 926090 | 932534 | 938694 | 10 |
| 51 | 873348 | 881716 | 889815 | 897643 | 905198 | 912478 | 919479 | 926200 | 932639 | 938794 | 9 |
| 52 | 873489 | 881853 | 889947 | 897772 | 905322 | 912597 | 919593 | 926310 | 932744 | 938894 | 8 |
| 53 | 873631 | 881990 | 890080 | 897900 | 905445 | 912715 | 919707 | 926419 | 932849 | 938994 | 7 |
| 54 | 873772 | 882127 | 890213 | 898028 | 905569 | 912834 | 919822 | 926529 | 932954 | 939094 | 6 |
| 55 | 873914 | 882264 | 890345 | 898156 | 905692 | 912953 | 919936 | 926638 | 933058 | 939194 | 5 |
| 56 | 874055 | 882401 | 890478 | 898283 | 905815 | 913072 | 920050 | 926747 | 933163 | 939294 | 4 |
| 57 | 874196 | 882538 | 890610 | 898411 | 905939 | 913190 | 920164 | 926857 | 933267 | 939394 | 3 |
| 58 | 874338 | 882674 | 890742 | 898539 | 906062 | 913309 | 920277 | 926966 | 933372 | 939494 | 2 |
| 59 | 874479 | 882811 | 890874 | 898667 | 906185 | 913427 | 920391 | 927075 | 933476 | 939593 | 1 |
| 60 | 874620 | 882948 | 891007 | 898794 | 906308 | 913546 | 920505 | 927184 | 933580 | 939693 | 0 |
| M | 29° | 28° | 27° | 26° | 25° | 24° | 23° | 22° | 21° | 20° | M |

NATURAL CO-SINES.

| M | 70° | 71° | 72° | 73° | 74° | 75° | 76° | 77° | 78° | 79° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 939693 | 945519 | 951057 | 956305 | 961262 | 965926 | 970296 | 974370 | 978148 | 981627 | 60 |
| 1 | 939792 | 945613 | 951146 | 956390 | 961342 | 966001 | 970366 | 974436 | 978208 | 981683 | 59 |
| 2 | 939891 | 945708 | 951236 | 956475 | 961422 | 966076 | 970436 | 974501 | 978268 | 981738 | 58 |
| 3 | 939991 | 945802 | 951326 | 956560 | 961502 | 966151 | 970507 | 974566 | 978329 | 981793 | 57 |
| 4 | 940090 | 945897 | 951415 | 956644 | 961582 | 966226 | 970577 | 974631 | 978389 | 981849 | 56 |
| 5 | 940189 | 945991 | 951505 | 956729 | 961662 | 966301 | 970647 | 974696 | 978449 | 981904 | 55 |
| 6 | 940288 | 946085 | 951594 | 956814 | 961741 | 966376 | 970717 | 974761 | 978509 | 981959 | 54 |
| 7 | 940387 | 946180 | 951684 | 956898 | 961821 | 966451 | 970786 | 974826 | 978569 | 982014 | 53 |
| 8 | 940486 | 946274 | 951773 | 956983 | 961901 | 966526 | 970856 | 974891 | 978629 | 982069 | 52 |
| 9 | 940585 | 946368 | 951862 | 957067 | 961980 | 966600 | 970926 | 974956 | 978689 | 982123 | 51 |
| 10 | 940684 | 946462 | 951951 | 957151 | 962059 | 966675 | 970995 | 975020 | 978748 | 982178 | 50 |
| 11 | 940782 | 946556 | 952040 | 957235 | 962139 | 966749 | 971065 | 975085 | 978808 | 982233 | 49 |
| 12 | 940881 | 946649 | 952129 | 957320 | 962218 | 966823 | 971134 | 975149 | 978867 | 982287 | 48 |
| 13 | 940979 | 946743 | 952218 | 957404 | 962297 | 966898 | 971204 | 975214 | 978927 | 982342 | 47 |
| 14 | 941078 | 946837 | 952307 | 957488 | 962376 | 966972 | 971273 | 975278 | 978986 | 982396 | 46 |
| 15 | 941176 | 946930 | 952396 | 957571 | 962455 | 967046 | 971342 | 975342 | 979046 | 982450 | 45 |
| 16 | 941274 | 947024 | 952484 | 957655 | 962534 | 967120 | 971411 | 975407 | 979105 | 982505 | 44 |
| 17 | 941372 | 947117 | 952573 | 957739 | 962613 | 967194 | 971480 | 975471 | 979164 | 982559 | 43 |
| 18 | 941471 | 947210 | 952662 | 957823 | 962692 | 967268 | 971549 | 975535 | 979223 | 982613 | 42 |
| 19 | 941569 | 947304 | 952750 | 957906 | 962770 | 967342 | 971618 | 975599 | 979282 | 982667 | 41 |
| 20 | 941667 | 947397 | 952838 | 957990 | 962849 | 967415 | 971687 | 975662 | 979341 | 982721 | 40 |
| 21 | 941764 | 947490 | 952926 | 958073 | 962928 | 967489 | 971755 | 975726 | 979399 | 982774 | 39 |
| 22 | 941862 | 947583 | 953015 | 958156 | 963006 | 967562 | 971824 | 975790 | 979458 | 982828 | 38 |
| 23 | 941960 | 947676 | 953103 | 958239 | 963084 | 967636 | 971893 | 975853 | 979517 | 982882 | 37 |
| 24 | 942058 | 947768 | 953191 | 958323 | 963163 | 967709 | 971961 | 975917 | 979575 | 982935 | 36 |
| 25 | 942155 | 947861 | 953279 | 958406 | 963241 | 967783 | 972029 | 975980 | 979634 | 982989 | 35 |
| 26 | 942253 | 947954 | 953366 | 958489 | 963319 | 967856 | 972098 | 976044 | 979692 | 983042 | 34 |
| 27 | 942350 | 948046 | 953454 | 958572 | 963397 | 967929 | 972166 | 976107 | 979750 | 983096 | 33 |
| 28 | 942447 | 948139 | 953542 | 958654 | 963475 | 968002 | 972234 | 976170 | 979809 | 983149 | 32 |
| 29 | 942544 | 948231 | 953629 | 958737 | 963553 | 968075 | 972302 | 976233 | 979867 | 983202 | 31 |
| 30 | 942642 | 948324 | 953717 | 958820 | 963631 | 968148 | 972370 | 976296 | 979925 | 983255 | 30 |
| 31 | 942739 | 948416 | 953804 | 958902 | 963708 | 968220 | 972438 | 976359 | 979983 | 983308 | 29 |
| 32 | 942836 | 948508 | 953892 | 958985 | 963786 | 968293 | 972506 | 976422 | 980041 | 983361 | 28 |
| 33 | 942932 | 948600 | 953979 | 959067 | 963863 | 968366 | 972573 | 976485 | 980098 | 983414 | 27 |
| 34 | 943029 | 948692 | 954066 | 959150 | 963941 | 968438 | 972641 | 976547 | 980156 | 983466 | 26 |
| 35 | 943126 | 948784 | 954153 | 959232 | 964018 | 968511 | 972708 | 976610 | 980214 | 983519 | 25 |
| 36 | 943223 | 948876 | 954240 | 959314 | 964095 | 968583 | 972776 | 976672 | 980271 | 983572 | 24 |
| 37 | 943319 | 948968 | 954327 | 959396 | 964173 | 968656 | 972843 | 976735 | 980329 | 983624 | 23 |
| 38 | 943416 | 949060 | 954414 | 959478 | 964250 | 968728 | 972911 | 976797 | 980386 | 983676 | 22 |
| 39 | 943512 | 949151 | 954501 | 959560 | 964327 | 968800 | 972978 | 976859 | 980443 | 983729 | 21 |
| 40 | 943609 | 949243 | 954588 | 959642 | 964404 | 968872 | 973045 | 976922 | 980501 | 983781 | 20 |
| 41 | 943705 | 949334 | 954674 | 959724 | 964481 | 968944 | 973112 | 976984 | 980558 | 983833 | 19 |
| 42 | 943801 | 949426 | 954761 | 959805 | 964557 | 969016 | 973179 | 977046 | 980615 | 983885 | 18 |
| 43 | 943897 | 949517 | 954847 | 959887 | 964634 | 969088 | 973246 | 977108 | 980672 | 983937 | 17 |
| 44 | 943993 | 949608 | 954934 | 959968 | 964711 | 969159 | 973313 | 977169 | 980729 | 983989 | 16 |
| 45 | 944089 | 949699 | 955020 | 960050 | 964787 | 969231 | 973379 | 977231 | 980785 | 984041 | 15 |
| 46 | 944185 | 949790 | 955106 | 960131 | 964864 | 969303 | 973446 | 977293 | 980842 | 984092 | 14 |
| 47 | 944281 | 949881 | 955192 | 960213 | 964940 | 969374 | 973512 | 977354 | 980899 | 984144 | 13 |
| 48 | 944376 | 949972 | 955278 | 960294 | 965017 | 969445 | 973579 | 977416 | 980955 | 984196 | 12 |
| 49 | 944472 | 950063 | 955364 | 960375 | 965093 | 969517 | 973645 | 977477 | 981012 | 984247 | 11 |
| 50 | 944568 | 950154 | 955450 | 960456 | 965169 | 969588 | 973712 | 977539 | 981068 | 984299 | 10 |
| 51 | 944663 | 950244 | 955536 | 960537 | 965245 | 969659 | 973778 | 977600 | 981124 | 984250 | 9 |
| 52 | 944758 | 950335 | 955622 | 960618 | 965321 | 969730 | 973844 | 977661 | 981181 | 984401 | 8 |
| 53 | 944854 | 950425 | 955707 | 960698 | 965397 | 969801 | 973910 | 977722 | 981237 | 984452 | 7 |
| 54 | 944949 | 950516 | 955793 | 960779 | 965473 | 969872 | 973976 | 977783 | 981293 | 984503 | 6 |
| 55 | 945044 | 950606 | 955879 | 960850 | 965548 | 969943 | 974042 | 977844 | 981349 | 984554 | 5 |
| 56 | 945139 | 950696 | 955964 | 960940 | 965624 | 970014 | 974108 | 977905 | 981405 | 984605 | 4 |
| 57 | 945234 | 950787 | 956049 | 961021 | 965700 | 970084 | 974173 | 977966 | 981460 | 984656 | 3 |
| 58 | 945329 | 950877 | 956153 | 961101 | 965775 | 970155 | 974239 | 978027 | 981516 | 984707 | 2 |
| 59 | 945424 | 950967 | 956220 | 961182 | 965851 | 970225 | 974305 | 978087 | 981572 | 984757 | 1 |
| 60 | 945519 | 951057 | 956305 | 961262 | 965926 | 970296 | 974370 | 978148 | 981627 | 984808 | 0 |
| M | 19° | 18° | 17° | 16° | 15° | 14° | 13° | 12° | 11° | 10° | M |

NATURAL CO-SINES.

| M | 80° | 81° | 82° | 83° | 84° | 85° | 86° | 87° | 88° | 89° | M |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 984808 | 987688 | 990268 | 992546 | 994522 | 996195 | 997564 | 998630 | 999391 | 999848 | 60 |
| 1 | 984858 | 987734 | 990309 | 992582 | 994552 | 996220 | 997584 | 998645 | 999401 | 999853 | 59 |
| 2 | 984909 | 987779 | 990349 | 992617 | 994583 | 996245 | 997605 | 998660 | 999411 | 999858 | 58 |
| 3 | 984959 | 987825 | 990389 | 992652 | 994613 | 996270 | 997625 | 998675 | 999421 | 999863 | 57 |
| 4 | 985009 | 987870 | 990429 | 992687 | 994643 | 996295 | 997645 | 998690 | 999431 | 999867 | 56 |
| 5 | 985059 | 987915 | 990469 | 992722 | 994673 | 996320 | 997665 | 998705 | 999441 | 999872 | 55 |
| 6 | 985109 | 987960 | 990510 | 992757 | 994703 | 996345 | 997684 | 998719 | 999450 | 999877 | 54 |
| 7 | 985159 | 988005 | 990549 | 992792 | 994733 | 996370 | 997704 | 998734 | 999460 | 999881 | 53 |
| 8 | 985209 | 988050 | 990589 | 992827 | 994763 | 996395 | 997724 | 998749 | 999469 | 999886 | 52 |
| 9 | 985259 | 988095 | 990629 | 992862 | 994792 | 996420 | 997743 | 998763 | 999479 | 999890 | 51 |
| 10 | 985309 | 988139 | 990669 | 992897 | 994822 | 996444 | 997763 | 998778 | 999488 | 999894 | 50 |
| 11 | 985358 | 988184 | 990708 | 992931 | 994851 | 996469 | 997782 | 998792 | 999497 | 999898 | 49 |
| 12 | 985408 | 988228 | 990748 | 992966 | 994881 | 996493 | 997802 | 998806 | 999507 | 999903 | 48 |
| 13 | 985457 | 988273 | 990787 | 993000 | 994910 | 996517 | 997821 | 998820 | 999516 | 999907 | 47 |
| 14 | 985507 | 988317 | 990827 | 993034 | 994939 | 996541 | 997840 | 998834 | 999525 | 999911 | 46 |
| 15 | 985556 | 988362 | 990866 | 993069 | 994969 | 996566 | 997859 | 998848 | 999534 | 999914 | 45 |
| 16 | 985605 | 988406 | 990905 | 993103 | 994998 | 996590 | 997878 | 998862 | 999542 | 999918 | 44 |
| 17 | 985654 | 988450 | 990944 | 993137 | 995027 | 996614 | 997897 | 998876 | 999551 | 999922 | 43 |
| 18 | 985704 | 988494 | 990983 | 993171 | 995056 | 996637 | 997916 | 998890 | 999560 | 999925 | 42 |
| 19 | 985752 | 988538 | 991022 | 993205 | 995084 | 996661 | 997934 | 998904 | 999568 | 999929 | 41 |
| 20 | 985801 | 988582 | 991061 | 993238 | 995113 | 996685 | 997953 | 998917 | 999577 | 999932 | 40 |
| 21 | 985850 | 988626 | 991100 | 993272 | 995142 | 996709 | 997972 | 998931 | 999585 | 999936 | 39 |
| 22 | 985899 | 988669 | 991138 | 993306 | 995171 | 996732 | 997990 | 998944 | 999594 | 999939 | 38 |
| 23 | 985948 | 988713 | 991177 | 993339 | 995199 | 996756 | 998008 | 998957 | 999602 | 999942 | 37 |
| 24 | 985996 | 988756 | 991216 | 993373 | 995227 | 996779 | 998027 | 998971 | 999610 | 999945 | 36 |
| 25 | 986045 | 988800 | 991254 | 993406 | 995256 | 996802 | 998045 | 998984 | 999618 | 999948 | 35 |
| 26 | 986093 | 988843 | 991292 | 993440 | 995284 | 996825 | 998063 | 998997 | 999626 | 999951 | 34 |
| 27 | 986141 | 988887 | 991331 | 993473 | 995312 | 996849 | 998081 | 999010 | 999634 | 999954 | 33 |
| 28 | 986189 | 988930 | 991369 | 993506 | 995340 | 996872 | 998099 | 999023 | 999642 | 999957 | 32 |
| 29 | 986238 | 988973 | 991407 | 993539 | 995368 | 996895 | 998117 | 999036 | 999650 | 999959 | 31 |
| 30 | 986286 | 989016 | 991445 | 993572 | 995396 | 996917 | 998135 | 999048 | 999657 | 999962 | 30 |
| 31 | 986334 | 989059 | 991483 | 993605 | 995424 | 996940 | 998153 | 999061 | 999665 | 999964 | 29 |
| 32 | 986382 | 989102 | 991521 | 993638 | 995452 | 996963 | 998170 | 999073 | 999672 | 999967 | 28 |
| 33 | 986429 | 989145 | 991558 | 993670 | 995480 | 996985 | 998188 | 999086 | 999680 | 999969 | 27 |
| 34 | 986477 | 989187 | 991596 | 993703 | 995507 | 997008 | 998205 | 999098 | 999687 | 999971 | 26 |
| 35 | 986525 | 989230 | 991634 | 993736 | 995535 | 997030 | 998223 | 999111 | 999694 | 999974 | 25 |
| 36 | 986572 | 989272 | 991671 | 993768 | 995562 | 997053 | 998240 | 999123 | 999701 | 999976 | 24 |
| 37 | 986620 | 989315 | 991709 | 993800 | 995589 | 997075 | 998257 | 999135 | 999709 | 999978 | 23 |
| 38 | 986667 | 989357 | 991746 | 993833 | 995617 | 997097 | 998274 | 999147 | 999716 | 999980 | 22 |
| 39 | 986714 | 989399 | 991783 | 993865 | 995644 | 997119 | 998291 | 999159 | 999722 | 999981 | 21 |
| 40 | 986762 | 989442 | 991820 | 993897 | 995671 | 997141 | 998308 | 999171 | 999729 | 999983 | 20 |
| 41 | 986809 | 989484 | 991857 | 993929 | 995698 | 997163 | 998325 | 999183 | 999736 | 999985 | 19 |
| 42 | 986856 | 989526 | 991894 | 993961 | 995725 | 997185 | 998342 | 999194 | 999743 | 999986 | 18 |
| 43 | 986903 | 989568 | 991931 | 993993 | 995752 | 997207 | 998359 | 999206 | 999749 | 999988 | 17 |
| 44 | 986950 | 989610 | 991968 | 994025 | 995778 | 997229 | 998375 | 999218 | 999756 | 999989 | 16 |
| 45 | 986996 | 989651 | 992005 | 994056 | 995805 | 997250 | 998392 | 999229 | 999762 | 999991 | 15 |
| 46 | 987043 | 989693 | 992042 | 994088 | 995832 | 997272 | 998408 | 999240 | 999768 | 999992 | 14 |
| 47 | 987090 | 989735 | 992078 | 994120 | 995858 | 997293 | 998425 | 999252 | 999774 | 999993 | 13 |
| 48 | 987136 | 989776 | 992115 | 994151 | 995884 | 997315 | 998441 | 999263 | 999781 | 999994 | 12 |
| 49 | 987183 | 989818 | 992151 | 994182 | 995911 | 997336 | 998457 | 999274 | 999787 | 999995 | 11 |
| 50 | 987229 | 989859 | 992187 | 994214 | 995937 | 997357 | 998473 | 999285 | 999793 | 999996 | 10 |
| 51 | 987275 | 989900 | 992224 | 994245 | 995963 | 997378 | 998489 | 999296 | 999799 | 999997 | 9 |
| 52 | 987322 | 989942 | 992260 | 994276 | 995989 | 997399 | 998505 | 999307 | 999804 | 999997 | 8 |
| 53 | 987368 | 989983 | 992296 | 994307 | 996015 | 997420 | 998521 | 999318 | 999810 | 999998 | 7 |
| 54 | 987414 | 990024 | 992332 | 994338 | 996041 | 997441 | 998537 | 999328 | 999816 | 999999 | 6 |
| 55 | 987460 | 990065 | 992368 | 994369 | 996067 | 997462 | 998552 | 999339 | 999821 | 999999 | 5 |
| 56 | 987506 | 990106 | 992404 | 994400 | 996093 | 997482 | 998568 | 999350 | 999827 | 999999 | 4 |
| 57 | 987551 | 990146 | 992439 | 994430 | 996118 | 997503 | 998584 | 999360 | 999832 | 1000000 | 3 |
| 58 | 987597 | 990187 | 992475 | 994461 | 996144 | 997523 | 998599 | 999370 | 999837 | 1000000 | 2 |
| 59 | 987643 | 990228 | 992511 | 994491 | 996169 | 997544 | 998614 | 999381 | 999843 | 1000000 | 1 |
| 60 | 987688 | 990268 | 992546 | 994522 | 996195 | 997564 | 998630 | 999391 | 999848 | 1000000 | 0 |
| M | 9° | 8° | 7° | 6° | 5° | 4° | 3° | 2° | 1° | 0° | M |

NATURAL CO-SINES.

TABLE OF DIFFERENCES—AUXILIARY TO TABLE IV.

| Deg. | Diff. | Deg | Diff | Deg. | Diff | Deg | Diff. | Deg. | Diff. | Deg. | Diff | Deg. | Diff. | Deg. | Diff. | Deg. | Diff. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 485 | 10 | 477 | 20 | 454 | 30 | 418 | 40 | 369 | 50 | 309 | 60 | 239 | 70 | 162 | 80 | 80 |
| 1 | 485 | 11 | 475 | 21 | 451 | 31 | 413 | 41 | 363 | 51 | 302 | 61 | 231 | 71 | 154 | 81 | 72 |
| 2 | 484 | 12 | 473 | 22 | 448 | 32 | 409 | 42 | 357 | 52 | 295 | 62 | 224 | 72 | 146 | 82 | 63 |
| 3 | 484 | 13 | 471 | 23 | 445 | 33 | 404 | 43 | 352 | 53 | 288 | 63 | 216 | 73 | 138 | 83 | 55 |
| 4 | 483 | 14 | 469 | 24 | 441 | 34 | 399 | 44 | 346 | 54 | 282 | 64 | 209 | 74 | 130 | 84 | 47 |
| 5 | 483 | 15 | 467 | 25 | 438 | 35 | 394 | 45 | 340 | 55 | 275 | 65 | 201 | 75 | 121 | 85 | 38 |
| 6 | 482 | 16 | 465 | 26 | 434 | 36 | 390 | 46 | 334 | 56 | 268 | 66 | 193 | 76 | 113 | 86 | 30 |
| 7 | 481 | 17 | 462 | 27 | 430 | 37 | 385 | 47 | 327 | 57 | 260 | 67 | 185 | 77 | 105 | 87 | 21 |
| 8 | 480 | 18 | 460 | 28 | 426 | 38 | 380 | 48 | 321 | 58 | 253 | 68 | 178 | 78 | 97 | 88 | 13 |
| 9 | 478 | 19 | 457 | 29 | 422 | 39 | 374 | 49 | 315 | 59 | 246 | 69 | 170 | 79 | 88 | 89 | 4 |

## TABLE V.

**Showing by inspection the areas of all Circles from 1 to 101, advancing by one-tenth.**

| Dia | Area. | Dia. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 0 | 0.7854 | 5.0 | 19.6350 | 9.0 | 63.6174 | 13.0 | 132.7326 | 17.0 | 226.9806 | 21.0 | 346.3614 |
| 1.1 | 0.9503 | 5.1 | 20.4282 | 9.1 | 65.0389 | 13.1 | 134.7824 | 17.1 | 229.6588 | 21.1 | 349.6679 |
| 1.2 | 1.1309 | 5.2 | 21.2372 | 9.2 | 66.4762 | 13.2 | 136.8480 | 17.2 | 232.3527 | 21.2 | 352.9901 |
| 1.3 | 1.3273 | 5.3 | 22.0618 | 9.3 | 67.9292 | 13.3 | 138.9294 | 17.3 | 235.0623 | 21.3 | 356.3281 |
| 1.4 | 1.5393 | 5.4 | 22.9022 | 9.4 | 69.3979 | 13.4 | 141.0264 | 17.4 | 237.7877 | 21.4 | 359.6817 |
| 1.5 | 1.7671 | 5.5 | 23.7583 | 9.5 | 70.8823 | 13.5 | 143.1391 | 17.5 | 240.5287 | 21.5 | 363.0511 |
| 1.6 | 2.0106 | 5.6 | 24.6301 | 9.6 | 72.3824 | 13.6 | 145.2675 | 17.6 | 243.2855 | 21.6 | 366.4362 |
| 1.7 | 2.2698 | 5.7 | 25.5176 | 9.7 | 73.8982 | 13.7 | 147.4117 | 17.7 | 246.0579 | 21.7 | 369.8370 |
| 1.8 | 2.5446 | 5.8 | 26.4208 | 9.8 | 75.4298 | 13.8 | 149.5715 | 17.8 | 248.8461 | 21.8 | 373.2534 |
| 1.9 | 2.8352 | 5.9 | 27.3397 | 9.9 | 76.9770 | 13.9 | 151.7471 | 17.9 | 251.6500 | 21.9 | 376.6856 |
| 2.0 | 3.1416 | 6.0 | 28.2744 | 10.0 | 78.5400 | 14.0 | 153.9384 | 18.0 | 254.4696 | 22.0 | 380.1336 |
| 2.1 | 3.4636 | 6.1 | 29.2247 | 10.1 | 80.1186 | 14.1 | 156.1453 | 18.1 | 257.3048 | 22.1 | 383.5972 |
| 2.2 | 3.8013 | 6.2 | 30.1907 | 10.2 | 81.7130 | 14.2 | 158.3680 | 18.2 | 260.1558 | 22.2 | 387.0765 |
| 2.3 | 4.1547 | 6.3 | 31.1725 | 10.3 | 83.3230 | 14.3 | 160.6064 | 18.3 | 263.0226 | 22.3 | 390.5751 |
| 2.4 | 4.5239 | 6.4 | 32.1699 | 10.4 | 84.9488 | 14.4 | 162.8605 | 18.4 | 265.9050 | 22.4 | 394.0823 |
| 2.5 | 4.9087 | 6.5 | 33.1831 | 10.5 | 86.5903 | 14.5 | 165.1303 | 18.5 | 268.8031 | 22.5 | 397.6087 |
| 2.6 | 5.3093 | 6.6 | 34.2120 | 10.6 | 88.2475 | 14.6 | 167.4158 | 18.6 | 271.7169 | 22.6 | 401.1509 |
| 2.7 | 5.7255 | 6.7 | 35.2566 | 10.7 | 89.9204 | 14.7 | 169.7170 | 18.7 | 274.6465 | 22.7 | 404.7087 |
| 2.8 | 6.1575 | 6.8 | 36.3168 | 10.8 | 91.6090 | 14.8 | 172.0340 | 18.8 | 277.5917 | 22.8 | 408.2823 |
| 2.9 | 6.6052 | 6.9 | 37.3928 | 10.9 | 93.3133 | 14.9 | 174.3666 | 18.9 | 280.5527 | 22.9 | 411.8716 |
| 3.0 | 7.0686 | 7.0 | 38.4846 | 11.0 | 95.0334 | 15.0 | 176.7150 | 19.0 | 283.5294 | 23.0 | 415.4766 |
| 3.1 | 7.5476 | 7.1 | 39.5920 | 11.1 | 96.7691 | 15.1 | 179.0790 | 19.1 | 286.5217 | 23.1 | 419.0972 |
| 3.2 | 8.0424 | 7.2 | 40.7151 | 11.2 | 98.5205 | 15.2 | 181.4588 | 19.2 | 289.5298 | 23.2 | 422.7336 |
| 3.3 | 8.5530 | 7.3 | 41.8539 | 11.3 | 100.2877 | 15.3 | 183.8542 | 19.3 | 292.5536 | 23.3 | 426.3858 |
| 3.4 | 9.0792 | 7.4 | 43.0085 | 11.4 | 102.0705 | 15.4 | 186.2654 | 19.4 | 295.5931 | 23.4 | 430.0536 |
| 3.5 | 9.6211 | 7.5 | 44.1787 | 11.5 | 103.8691 | 15.5 | 188.6923 | 19.5 | 298.6483 | 23.5 | 433.7371 |
| 3.6 | 10.1787 | 7.6 | 45.3647 | 11.6 | 105.6834 | 15.6 | 191.1349 | 19.6 | 301.7192 | 23.6 | 437.4363 |
| 3.7 | 10.7521 | 7.7 | 46.5663 | 11.7 | 107.5134 | 15.7 | 193.5932 | 19 7 | 304 8060 | 23.7 | 441.1511 |
| 3.8 | 11.3411 | 7.8 | 47.7837 | 11.8 | 109.3590 | 15.8 | 196.0672 | 19.8 | 307.9082 | 23.8 | 444.8819 |
| 3.9 | 11.9459 | 7.9 | 49.0168 | 11.9 | 111.2204 | 15.9 | 198.5569 | 19.9 | 311.0252 | 23.9 | 448.6283 |
| 4.0 | 12.5664 | 8.0 | 50.2656 | 12.0 | 113.0976 | 16.0 | 201.0624 | 20.0 | 314.1600 | 24.0 | 452.3904 |
| 4.1 | 13.2025 | 8.1 | 51.5300 | 12.1 | 114.9904 | 16.1 | 203.5835 | 20.1 | 317.3094 | 24.1 | 456.1681 |
| 4.2 | 13.8544 | 8.2 | 52.8102 | 12.2 | 116.8989 | 16.2 | 206.1203 | 20.2 | 320.4746 | 24.2 | 459.9616 |
| 4.3 | 14.5220 | 8.3 | 54.1062 | 12.3 | 118.8231 | 16.3 | 208.6729 | 20.3 | 323.6554 | 24.3 | 463.7708 |
| 4.4 | 15.2053 | 8.4 | 55.4178 | 12.4 | 120.7631 | 16.4 | 211.2411 | 20.4 | 326.8520 | 24.4 | 467.5957 |
| 4.5 | 15.9043 | 8.5 | 56.7451 | 12.5 | 122.7187 | 16.5 | 213.8251 | 20.5 | 330.0643 | 24.5 | 471.4363 |
| 4.6 | 16.6190 | 8.6 | 58.0881 | 12.6 | 124.6901 | 16.6 | 216.4248 | 20.6 | 333.2923 | 24.6 | 475.2926 |
| 4.7 | 17.3494 | 8.7 | 59.4469 | 12.7 | 126.6771 | 16.7 | 219.0402 | 20.7 | 336 5360 | 24.7 | 479.1646 |
| 4.8 | 18.0956 | 8.8 | 60.8213 | 12.8 | 128.6799 | 16.8 | 221.6712 | 20.8 | 339.7954 | 24.8 | 483.0524 |
| 4.9 | 18.8574 | 8.9 | 62.2115 | 12.9 | 130.6984 | 16.9 | 224.3180 | 20.9 | 343.0705 | 24.9 | 486.9558 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|
| 25.0 | 490.8750 | 31.0 | 754.7694 | 37.0 | 1075.2126 | 43.0 | 1452.2046 | 49.0 | 1885.7454 |
| 25.1 | 494.8098 | 31.1 | 759.6467 | 37.1 | 1081.0324 | 43.1 | 1458.9668 | 49.1 | 1893.4501 |
| 25.2 | 498.7604 | 31.2 | 764.5397 | 37.2 | 1086.8679 | 43.2 | 1465.7448 | 49.2 | 1901.1706 |
| 25.3 | 502.7266 | 31.3 | 769.4485 | 37.3 | 1092.7191 | 43.3 | 1472.5385 | 49.3 | 1908.9068 |
| 25.4 | 506.7086 | 31.4 | 774.3729 | 37.4 | 1098.5862 | 43.4 | 1479.3480 | 49.4 | 1916.6587 |
| 25.5 | 510.7063 | 31.5 | 779.3131 | 37.5 | 1104.4687 | 43.5 | 1486.1731 | 49.5 | 1924.4263 |
| 25.6 | 514.7196 | 31.6 | 784.2689 | 37.6 | 1110.3671 | 43.6 | 1493.0139 | 49.6 | 1932.2096 |
| 25.7 | 518.7488 | 31.7 | 789.2406 | 37.7 | 1116.2811 | 43.7 | 1499.8705 | 49.7 | 1940.0086 |
| 25.8 | 522.7936 | 31.8 | 794.2278 | 37.8 | 1122.2109 | 43.8 | 1506.7427 | 49.8 | 1947.8234 |
| 25.9 | 526.8541 | 31.9 | 799.2308 | 37.9 | 1128.1564 | 43.9 | 1513.6287 | 49.9 | 1955.6538 |
| 26.0 | 530.9304 | 32.0 | 804.2496 | 38.0 | 1134.1176 | 44.0 | 1520.5344 | 50.0 | 1963.5000 |
| 26.1 | 535.0223 | 32.1 | 809.2840 | 38.1 | 1140.0946 | 44.1 | 1527.4537 | 50.1 | 1971.3618 |
| 26.2 | 539.1299 | 32.2 | 814.3341 | 38.2 | 1146.0870 | 44.2 | 1534.3888 | 50.2 | 1979.2394 |
| 26.3 | 543.2533 | 32.3 | 819.3999 | 38.3 | 1152.0954 | 44.3 | 1541.3396 | 50.3 | 1987.1326 |
| 26.4 | 547.3923 | 32.4 | 824.4815 | 38.4 | 1158.1194 | 44.4 | 1548.3061 | 50.4 | 1995.0416 |
| 26.5 | 551.5471 | 32.5 | 829.5787 | 38.5 | 1164.1591 | 44.5 | 1555.2883 | 50.5 | 2002.9663 |
| 26.6 | 555.7176 | 32.6 | 834.6917 | 38.6 | 1170.2145 | 44.6 | 1562.2862 | 50.6 | 2010.9067 |
| 26.7 | 559.9038 | 32.7 | 839.8203 | 38.7 | 1176.2857 | 44.7 | 1569.2998 | 50.7 | 2018.8628 |
| 26.8 | 564.1056 | 32.8 | 844.9647 | 38.8 | 1182.3725 | 44.8 | 1576.3292 | 50.8 | 2026.8346 |
| 26.9 | 568.3232 | 32.9 | 850.1248 | 38.9 | 1188.4651 | 44.9 | 1583.3742 | 50.9 | 2034.8770 |
| 27.0 | 572.5566 | 33.0 | 855.3006 | 39.0 | 1194.5394 | 45.0 | 1590.4350 | 51.0 | 2042.8254 |
| 27.1 | 576.8056 | 33.1 | 860.4920 | 39.1 | 1200.7273 | 45.1 | 1597.5114 | 51.1 | 2050.8443 |
| 27.2 | 581.0703 | 33.2 | 865.6992 | 39.2 | 1206.8770 | 45.2 | 1604.6036 | 51.2 | 2058.8784 |
| 27.3 | 585.3507 | 33.3 | 870.9222 | 39.3 | 1213.0424 | 45.3 | 1611.7114 | 51.3 | 2066.9293 |
| 27.4 | 589.6469 | 33.4 | 876.1608 | 39.4 | 1219.2243 | 45.4 | 1618.8350 | 51.4 | 2074.9953 |
| 27.5 | 593.9587 | 33.5 | 881.4151 | 39.5 | 1225.4203 | 45.5 | 1625.9743 | 51.5 | 2083.0771 |
| 27.6 | 598.2863 | 33.6 | 886.6851 | 39.6 | 1231.6328 | 45.6 | 1633.1293 | 51.6 | 2091.1746 |
| 27.7 | 602.6295 | 33.7 | 891.9709 | 39.7 | 1237.8610 | 45.7 | 1640.3020 | 51.7 | 2099.2878 |
| 27.8 | 606.9885 | 33.8 | 897.2723 | 39.8 | 1244.1210 | 45.8 | 1647.4864 | 51.8 | 2107.4166 |
| 27.9 | 611.3632 | 33.9 | 902.5895 | 39.9 | 1250.3646 | 45.9 | 1654.6885 | 51.9 | 2115.5612 |
| 28.0 | 615.7536 | 34.0 | 907.9224 | 40.0 | 1256.6400 | 46.0 | 1661.9064 | 52.0 | 2123.7216 |
| 28.1 | 620.1596 | 34.1 | 913.2709 | 40.1 | 1262.9310 | 46.1 | 1669.1399 | 52.1 | 2131.8976 |
| 28.2 | 624.5814 | 34.2 | 918.6352 | 40.2 | 1269.2388 | 46.2 | 1676.3891 | 52.2 | 2140.0893 |
| 28.3 | 629.0190 | 34.3 | 924.0115 | 40.3 | 1275.5602 | 46.3 | 1683.6541 | 52.3 | 2148.2967 |
| 28.4 | 633.4722 | 34.4 | 929.4109 | 40.4 | 1281.8984 | 46.4 | 1690.9347 | 52.4 | 2156.5199 |
| 28.5 | 637.9411 | 34.5 | 934.8223 | 40.5 | 1288.2523 | 46.5 | 1698.2311 | 52.5 | 2164.7587 |
| 28.6 | 642.4257 | 34.6 | 940.2494 | 40.6 | 1294.6219 | 46.6 | 1705.5432 | 52.6 | 2173.0133 |
| 28.7 | 646.9261 | 34.7 | 945.6922 | 40.7 | 1301.0071 | 46.7 | 1712.8710 | 52.7 | 2181.2835 |
| 28.8 | 651.4421 | 34.8 | 951.1508 | 40.8 | 1307.4082 | 46.8 | 1720.2144 | 52.8 | 2189.5695 |
| 28.9 | 655.9739 | 34.9 | 956.6250 | 40.9 | 1313.8249 | 46.9 | 1727.5736 | 52.9 | 2197.8712 |
| 29.0 | 660.5214 | 35.0 | 962.1150 | 41.0 | 1320.2574 | 47.0 | 1734.9486 | 53.0 | 2206.1886 |
| 29.1 | 665.0845 | 35.1 | 967.6206 | 41.1 | 1326.7055 | 47.1 | 1742.3392 | 53.1 | 2214.5216 |
| 29.2 | 669.6634 | 35.2 | 973.1420 | 41.2 | 1333.1693 | 47.2 | 1749.7455 | 53.2 | 2222.8704 |
| 29.3 | 674.2580 | 35.3 | 978.6790 | 41.3 | 1339.6489 | 47.3 | 1757.1675 | 53.3 | 2231.2350 |
| 29.4 | 678.8683 | 35.4 | 984.2318 | 41.4 | 1346.1441 | 47.4 | 1764.6045 | 53.4 | 2239.6152 |
| 29.5 | 683.4943 | 35.5 | 989.8003 | 41.5 | 1352.6551 | 47.5 | 1772.0587 | 53.5 | 2248.0111 |
| 29.6 | 688.1360 | 35.6 | 995.3845 | 41.6 | 1359.1818 | 47.6 | 1779.5279 | 53.6 | 2256.4227 |
| 29.7 | 692.7934 | 35.7 | 1000.9843 | 41.7 | 1365.7242 | 47.7 | 1787.0127 | 53.7 | 2264.8701 |
| 29.8 | 697.4666 | 35.8 | 1006.6000 | 41.8 | 1372.2822 | 47.8 | 1794.5133 | 53.8 | 2273.2931 |
| 29.9 | 702.1554 | 35.9 | 1012.2313 | 41.9 | 1378.8560 | 47.9 | 1802.0296 | 53.9 | 2281.7519 |
| 30.0 | 706.8600 | 36.0 | 1017.8784 | 42.0 | 1385.4456 | 48.0 | 1809.5616 | 54.0 | 2290.2264 |
| 30.1 | 711.5802 | 36.1 | 1023.5411 | 42.1 | 1392.0508 | 48.1 | 1817.1092 | 54.1 | 2298.7165 |
| 30.2 | 716.3162 | 36.2 | 1029.2195 | 42.2 | 1398.6717 | 48.2 | 1824.6726 | 54.2 | 2307.2224 |
| 30.3 | 721.0678 | 36.3 | 1034.9131 | 42.3 | 1405.3083 | 48.3 | 1832.2518 | 54.3 | 2315.7440 |
| 30.4 | 725.8352 | 36.4 | 1040.6235 | 42.4 | 1411.9607 | 48.4 | 1839.8466 | 54.4 | 2324.2813 |
| 30.5 | 730.6183 | 36.5 | 1046.3491 | 42.5 | 1418.6287 | 48.5 | 1847.4571 | 54.5 | 2332.8343 |
| 30.6 | 735.4171 | 36.6 | 1052.0904 | 42.6 | 1425.3125 | 48.6 | 1855.0833 | 54.6 | 2341.4030 |
| 30.7 | 740.2316 | 36.7 | 1057.8474 | 42.7 | 1432.0119 | 48.7 | 1862.7253 | 54.7 | 2349.9874 |
| 30.8 | 745.0618 | 36.8 | 1063.6200 | 42.8 | 1438.7271 | 48.8 | 1870.3829 | 54.8 | 2358.5876 |
| 30.9 | 749.9077 | 36.9 | 1069.4084 | 42.9 | 1445.4580 | 48.9 | 1878.0563 | 54.9 | 2367.2034 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|
| 55.0 | 2375.8350 | 61.0 | 2922.4734 | 67.0 | 3525.6606 | 73.0 | 4185.3966 | 79.0 | 4901.6814 |
| 55.1 | 2384.4822 | 61.1 | 2932.0631 | 67.1 | 3536.1928 | 73.1 | 4196.8712 | 79.1 | 4914.0985 |
| 55.2 | 2393.1452 | 61.2 | 2941.6685 | 67.2 | 3546.7407 | 73.2 | 4208.3614 | 79.2 | 4926.5314 |
| 55.3 | 2401.8238 | 61.3 | 2951.2897 | 67.3 | 3557.3043 | 73.3 | 4219.8678 | 79.3 | 4938.9820 |
| 55.4 | 2410.5182 | 61.4 | 2960.9265 | 67.4 | 3567.8837 | 73.4 | 4231.3896 | 79.4 | 4951.4443 |
| 55.5 | 2419.2283 | 61.5 | 2970.5791 | 67.5 | 3578.4787 | 73.5 | 4242.9271 | 79.5 | 4963.9243 |
| 55.6 | 2427.9541 | 61.6 | 2980.2474 | 67.6 | 3589.0895 | 73.6 | 4254.4803 | 79.6 | 4976.4840 |
| 55.7 | 2436.6956 | 61.7 | 2989.9314 | 67.7 | 3599.7159 | 73.7 | 4266.0493 | 79.7 | 4988.9314 |
| 55.8 | 2445.4528 | 61.8 | 2999.6300 | 67.8 | 3610.3581 | 73.8 | 4277.6339 | 79.8 | 5001.4586 |
| 55.9 | 2454.2257 | 61.9 | 3009.3464 | 67.9 | 3621.0160 | 73.9 | 4289.2343 | 79.9 | 5014.0014 |
| 56.0 | 2463.0144 | 62.0 | 3019.0776 | 68.0 | 3631.6896 | 74.0 | 4300.8504 | 80.0 | 5026.5600 |
| 56.1 | 2471.8187 | 62.1 | 3028.8244 | 68.1 | 3642.3788 | 74.1 | 4312.4821 | 80.1 | 5039.1342 |
| 56.2 | 2480.6387 | 62.2 | 3038.5869 | 68.2 | 3653.0838 | 74.2 | 4324.1296 | 80.2 | 5051.7242 |
| 56.3 | 2489.4745 | 62.3 | 3048.3651 | 68.3 | 3663.8040 | 74.3 | 4335.7928 | 80.3 | 5064.3298 |
| 56.4 | 2498.3259 | 62.4 | 3058.1591 | 68.4 | 3674.5410 | 74.4 | 4347.4717 | 80.4 | 5076.9552 |
| 56.5 | 2507.1931 | 62.5 | 3067.9687 | 68.5 | 3685.2931 | 74.5 | 4359.1663 | 80.5 | 5089.5883 |
| 56.6 | 2516.0760 | 62.6 | 3077.7941 | 68.6 | 3696.0060 | 74.6 | 4370.8766 | 80.6 | 5102.2411 |
| 56.7 | 2524.9736 | 62.7 | 3087.6341 | 68.7 | 3706.8445 | 74.7 | 4382.6026 | 80.7 | 5114.9096 |
| 56.8 | 2533.8888 | 62.8 | 3097.4919 | 68.8 | 3717.6437 | 74.8 | 4394.3448 | 80.8 | 5127.5938 |
| 56.9 | 2542.8188 | 62.9 | 3107.3644 | 68.9 | 3728.4587 | 74.9 | 4406.1018 | 80.9 | 5140.2937 |
| 57.0 | 2551.7646 | 63.0 | 3117.2526 | 69.0 | 3739.2894 | 75.0 | 4417.8750 | 81.0 | 5153.0094 |
| 57.1 | 2560.7260 | 63.1 | 3127.1564 | 69.1 | 3750.1357 | 75.1 | 4429.6638 | 81.1 | 5165.7407 |
| 57.2 | 2569.7031 | 63.2 | 3137.0758 | 69.2 | 3760.9978 | 75.2 | 4441.4684 | 81.2 | 5178.4877 |
| 57.3 | 2578.6959 | 63.3 | 3147.0114 | 69.3 | 3771.8756 | 75.3 | 4453.2886 | 81.3 | 5191.2505 |
| 57.4 | 2587.7045 | 63.4 | 3156.9664 | 69.4 | 3782.7691 | 75.4 | 4465.1246 | 81.4 | 5204.0285 |
| 57.5 | 2596.7287 | 63.5 | 3166.9291 | 69.5 | 3793.6783 | 75.5 | 4476.9763 | 81.5 | 5216.8231 |
| 57.6 | 2605.7687 | 63.6 | 3176.9115 | 69.6 | 3804.6032 | 75.6 | 4488.8437 | 81.6 | 5229.6330 |
| 57.7 | 2614.8243 | 63.7 | 3186.9097 | 69.7 | 3815.5438 | 75.7 | 4500.7268 | 81.7 | 5242.4586 |
| 57.8 | 2623.8957 | 63.8 | 3196.9235 | 69.8 | 3826.5002 | 75.8 | 4512.6256 | 81.8 | 5255.2998 |
| 57.9 | 2632.9828 | 63.9 | 3206.9531 | 69.9 | 3837.4722 | 75.9 | 4524.5401 | 81.9 | 5268.1568 |
| 58.0 | 2642.0856 | 64.0 | 3216.9984 | 70.0 | 3848.4600 | 76.0 | 4536.4704 | 82.0 | 5281.0296 |
| 58.1 | 2651.2046 | 64.1 | 3227.0593 | 70.1 | 3859.4952 | 76.1 | 4548.4163 | 82.1 | 5293.9180 |
| 58.2 | 2660.3382 | 64.2 | 3237.1360 | 70.2 | 3870.4826 | 76.2 | 4560.3787 | 82.2 | 5306.8221 |
| 58.3 | 2669.4882 | 64.3 | 3247.2284 | 70.3 | 3881.5174 | 76.3 | 4572.3553 | 82.3 | 5319.7439 |
| 58.4 | 2678.6538 | 64.4 | 3257.3365 | 70.4 | 3892.5680 | 76.4 | 4584.3583 | 82.4 | 5332.6775 |
| 58.5 | 2687.8351 | 64.5 | 3267.4603 | 70.5 | 3903.6343 | 76.5 | 4596.3571 | 82.5 | 5345.6287 |
| 58.6 | 2697.0321 | 64.6 | 3277.5998 | 70.6 | 3914.7163 | 76.6 | 4608.3816 | 82.6 | 5358.5957 |
| 58.7 | 2706.2449 | 64.7 | 3287.7550 | 70.7 | 3925.8140 | 76.7 | 4620.4218 | 82.7 | 5371.5983 |
| 58.8 | 2715.4733 | 64.8 | 3297.9260 | 70.8 | 3936.9274 | 76.8 | 4632.4776 | 82.8 | 5384.5762 |
| 58.9 | 2724.7175 | 64.9 | 3308.1126 | 70.9 | 3948.0565 | 76.9 | 4644.5492 | 82.9 | 5397.5908 |
| 59.0 | 2733.9774 | 65.0 | 3318.3150 | 71.0 | 3959.2014 | 77.0 | 4656.6366 | 83.0 | 5410.6206 |
| 59.1 | 2743.2529 | 65.1 | 3328.5340 | 71.1 | 3970.3619 | 77.1 | 4668.7396 | 83.1 | 5423.6660 |
| 59.2 | 2752.5442 | 65.2 | 3338.7668 | 71.2 | 3981.5381 | 77.2 | 4680.8583 | 83.2 | 5436.7272 |
| 59.3 | 2761.8512 | 65.3 | 3349.0162 | 71.3 | 3992.7301 | 77.3 | 4692.9927 | 83.3 | 5449.8042 |
| 59.4 | 2771.1739 | 65.4 | 3359.2814 | 71.4 | 4003.9373 | 77.4 | 4705.1429 | 83.4 | 5462.8968 |
| 59.5 | 2780.5123 | 65.5 | 3369.5623 | 71.5 | 4015.1611 | 77.5 | 4717.3087 | 83.5 | 5476.0051 |
| 59.6 | 2789.8664 | 65.6 | 3379.8589 | 71.6 | 4026.4002 | 77.6 | 4729.4903 | 83.6 | 5489.1291 |
| 59.7 | 2799.2362 | 65.7 | 3390.1712 | 71.7 | 4037.6550 | 77.7 | 4741.6875 | 83.7 | 5502.2689 |
| 59.8 | 2808.6218 | 65.8 | 3400.4992 | 71.8 | 4048.9254 | 77.8 | 4753.9605 | 83.8 | 5515.4243 |
| 59.9 | 2818.0230 | 65.9 | 3410.8429 | 71.9 | 4060.2116 | 77.9 | 4766.1292 | 83.9 | 5528.5958 |
| 60.0 | 2827.4400 | 66.0 | 3421.2024 | 72.0 | 4071.5136 | 78.0 | 4778.3736 | 84.0 | 5541.7824 |
| 60.1 | 2836.8726 | 66.1 | 3431.5775 | 72.1 | 4082.8332 | 78.1 | 4790.6336 | 84.1 | 5554.9849 |
| 60.2 | 2846.3210 | 66.2 | 3441.9633 | 72.2 | 4094.1645 | 78.2 | 4802.9094 | 84.2 | 5568.2032 |
| 60.3 | 2855.7850 | 66.3 | 3452.3749 | 72.3 | 4105.5125 | 78.3 | 4815.2010 | 84.3 | 5581.4372 |
| 60.4 | 2865.2648 | 66.4 | 3462.7971 | 72.4 | 4116.8793 | 78.4 | 4827.5082 | 84.4 | 5594.6869 |
| 60.5 | 2874.7603 | 66.5 | 3473.2351 | 72.5 | 4128.2587 | 78.5 | 4839.8311 | 84.5 | 5607.9523 |
| 60.6 | 2884.2615 | 66.6 | 3483.6888 | 72.6 | 4139.6524 | 78.6 | 4852.1697 | 84.6 | 5621.2334 |
| 60.7 | 2893.7984 | 66.7 | 3494.1640 | 72.7 | 4151.0667 | 78.7 | 4864.5241 | 84.7 | 5634.5682 |
| 60.8 | 2903.3410 | 66.8 | 3504.6432 | 72.8 | 4162.4943 | 78.8 | 4876.8973 | 84.8 | 5647.8428 |
| 60.9 | 2912.8993 | 66.9 | 3515.1430 | 72.9 | 4173.9376 | 78.9 | 4889.2799 | 84.9 | 5661.1710 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area |
|---|---|---|---|---|---|---|---|---|---|
| 85.0 | 5674.5150 | 88.2 | 6109.8150 | 91.4 | 6561.2081 | 94.6 | 7028.6702 | 97.8 | 7512.2253 |
| 85.1 | 5687.8746 | 88.3 | 6123.6774 | 91.5 | 6575.5651 | 94.7 | 7043.5025 | 97.9 | 7527.5956 |
| 85.2 | 5701.2500 | 88.4 | 6137.5554 | 91.6 | 6589.9458 | 94.8 | 7058.4180 | | |
| 85.3 | 5714.6410 | 88.5 | 6151.4491 | 91.7 | 6604.3222 | 94.9 | 7073.3202 | 98 0 | 7542.9816 |
| 85.4 | 5728.0478 | 88.6 | 6165.3585 | 91.8 | 6618.7542 | | | 98.1 | 7558.3832 |
| 85.5 | 5741.4703 | 88.7 | 6179.2837 | 91.9 | 6633.1820 | 95.0 | 7088.2350 | 98.2 | 7573.8006 |
| 85.6 | 5754.9085 | 88.8 | 6193.2245 | | | 95.1 | 7103.1654 | 98.3 | 7589.2338 |
| 85.7 | 5768.3624 | 88.9 | 6207.1811 | 92.0 | 6647.6256 | 95.2 | 7118.1116 | 98.4 | 7604.6826 |
| 85.8 | 5781.8320 | | | 92.1 | 6662 0848 | 95.3 | 7133.0734 | 98.5 | 7620.1471 |
| 85.9 | 5795.3173 | 89.0 | 6221.1534 | 92.2 | 6676.5597 | 95.4 | 7148.0510 | 98.6 | 7635.6273 |
| | | 89.1 | 6235.1413 | 92.3 | 6691.0161 | 95.5 | 7163.0443 | 98.7 | 7651.1933 |
| 86.0 | 5808.8184 | 89.2 | 6249.1450 | 92.4 | 6705.5567 | 95.6 | 7178.0533 | 98.8 | 7666.6349 |
| 86.1 | 5822.3351 | 89.3 | 6263.1644 | 92.5 | 6720.0787 | 95.7 | 7193.0780 | 98.9 | 7682.1623 |
| 86.2 | 5835.8675 | 89.4 | 6277.1995 | 92.6 | 6734.6165 | 95.8 | 7208.1184 | 99.0 | 7697.7054 |
| 86.3 | 5849.4157 | 89.5 | 6291.2035 | 92.7 | 6749.1699 | 95.9 | 7223.1745 | 99.1 | 7713.2641 |
| 86.4 | 5862.9795 | 89.6 | 6305.3168 | 92.8 | 6763.7391 | | | 99.2 | 7728.8386 |
| 86.5 | 5876.5591 | 89.7 | 6319.3990 | 92.9 | 6778.3240 | 96.0 | 7238.2464 | 99.3 | 7744.4288 |
| 86.6 | 5890.1541 | 89.8 | 6333.4970 | | | 96.1 | 7253.3339 | 99.4 | 7760.0347 |
| 86.7 | 5903.7654 | 89.9 | 6347.6813 | 93.0 | 6792.9246 | 96.2 | 7268.4371 | 99.5 | 7775.6563 |
| 86.8 | 5917.3920 | | | 93.1 | 6807.5408 | 96.3 | 7283.5561 | 99.6 | 7791.2936 |
| 86.9 | 5931.0344 | 90.0 | 6361.7400 | 93.2 | 6822.1730 | 96.4 | 7298.6907 | 99.7 | 7806.9466 |
| | | 90 1 | 6375.8850 | 93.3 | 6836.8206 | 96.5 | 7313.8411 | 99.8 | 7822.6154 |
| 87.0 | 5944.6926 | 90.2 | 6390.0458 | 93.4 | 6851.4840 | 96.6 | 7329.0072 | 99.9 | 7838.2998 |
| 87.1 | 5958.3644 | 90.3 | 6404.2222 | 93.5 | 6866.1631 | 96.7 | 7344.1890 | | |
| 87.2 | 5972.0559 | 90.4 | 6418.4144 | 93.6 | 6880.8579 | 96.8 | 7359.3864 | 100.0 | 7854.0000 |
| 87.3 | 5985.7691 | 90.5 | 6432.6223 | 93.7 | 6895.5685 | 96.9 | 7374.5996 | 100.1 | 7869.7159 |
| 87.4 | 5999.4821 | 90.6 | 6446.8474 | 93.8 | 6910.2947 | | | 100.2 | 7885.4474 |
| 87.5 | 6013.2187 | 90.7 | 6461.0852 | 93.9 | 6925.0367 | 97.0 | 7389.8286 | 100.3 | 7901.1947 |
| 87.6 | 6026.9711 | 90.8 | 6475.3402 | | | 97.1 | 7405.0732 | 100.4 | 7916.9577 |
| 87.7 | 6040.7391 | 90.9 | 6489.6109 | 94.0 | 6939.7944 | 97.2 | 7420.3335 | 100.5 | 7932.7363 |
| 87.8 | 6054.5149 | | | 94.1 | 6954.5677 | 97.3 | 7435.6095 | 100.6 | 7948.5307 |
| 87.9 | 6068.3224 | 91.0 | 6503.8974 | 94.2 | 6969.3568 | 97.4 | 7450.9013 | 100.7 | 7964.3408 |
| | | 91.1 | 6518.1995 | 94.3 | 6984.1614 | 97.5 | 7466.2087 | 100.8 | 7980.1667 |
| 88.0 | 6082.1376 | 91.2 | 6532.5173 | 94.4 | 6998.9821 | 97.6 | 7481.5319 | 100.9 | 7996.0082 |
| 88.1 | 6095.9684 | 91.3 | 6546.8909 | 94.5 | 7013.8183 | 97.7 | 7496.8707 | 101.0 | 8011.8654 |

## TABLE VI.

Showing by inspection the areas of all Circles from 1-8 to 101, advancing by one-eighth.

| Diam. | Area. | Diam. | Area. | Diam | Area. | Diam. | Area. | Diam | Area. | Diam | Area. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 3.0 | 7.0686 | 6.0 | 28.2744 | 9.0 | 63.6174 | 12 0 | 113.0976 | 15.0 | 176.7150 |
| 0.1 | 0.0122 | 3.1 | 7.6699 | 6.1 | 29.4647 | 9.1 | 65.3968 | 12.1 | 115.4660 | 15.1 | 179.6725 |
| 0.2 | 0.0490 | 3.2 | 8.2957 | 6.2 | 30.6796 | 9.2 | 67.2007 | 12.2 | 117.8590 | 15.2 | 182.6545 |
| 0.3 | 0.1104 | 3.3 | 8.9462 | 6.3 | 31.9192 | 9.3 | 69.0293 | 12.3 | 120.2766 | 15.3 | 185.6612 |
| 0.4 | 0.1963 | 3.4 | 9.6211 | 6.4 | 33.1831 | 9.4 | 70.8823 | 12.4 | 122.7187 | 15.4 | 188.6923 |
| 0.5 | 0.3068 | 3.5 | 10.3206 | 6.5 | 34.4717 | 9.5 | 72.7599 | 12.5 | 125.1854 | 15.5 | 191.7480 |
| 0.6 | 0.4417 | 3.6 | 11.0446 | 6.6 | 35.7847 | 9.6 | 74.6620 | 12.6 | 127.6765 | 15.6 | 194.8282 |
| 0.7 | 0.6013 | 3.7 | 11.7932 | 6.7 | 37.1224 | 9.7 | 76.5887 | 12.7 | 130.1923 | 15.7 | 197.9330 |
| 1.0 | 0.7854 | 4.0 | 12.5664 | 7.0 | 38.4846 | 10.0 | 78.5400 | 13.0 | 132.7326 | 16.0 | 201.0624 |
| 1.1 | 0.9940 | 4.1 | 12.3640 | 7.1 | 39.8713 | 10.1 | 80.5157 | 13.1 | 135.2974 | 16.1 | 204.2162 |
| 1.2 | 1.2271 | 4.2 | 14.1862 | 7.2 | 41.2825 | 10.2 | 82.5160 | 13.2 | 137.8867 | 16.2 | 207.3946 |
| 1.3 | 1.4848 | 4.3 | 15.0331 | 7.3 | 42.7184 | 10.3 | 84 5409 | 13.3 | 140.5007 | 16.3 | 210.5976 |
| 1.4 | 1.7671 | 4.4 | 15.9043 | 7.4 | 44.1787 | 10.4 | 86.5903 | 13.4 | 143.1391 | 16.4 | 213.8251 |
| 1.5 | 2.0739 | 4.5 | 16.8001 | 7.5 | 45.6636 | 10.5 | 88.6643 | 13.5 | 145.8021 | 16.5 | 217.0772 |
| 1.6 | 2.4052 | 4.6 | 17.7205 | 7.6 | 47.1730 | 10.6 | 90.7627 | 13.6 | 148.4896 | 16.6 | 220.3537 |
| 1.7 | 2.7611 | 4.7 | 18.6655 | 7.7 | 48.7070 | 10.7 | 92.8858 | 13.7 | 151.2017 | 16.7 | 223.6549 |
| 2.0 | 3.1416 | 5.0 | 19.6350 | 8.0 | 50.2656 | 11.0 | 95.0334 | 14.0 | 153.9384 | 17.0 | 226.9806 |
| 2.1 | 3.5465 | 5.1 | 20.6290 | 8.1 | 51.8486 | 11.1 | 97.2055 | 14.1 | 156.6995 | 17.1 | 230.3308 |
| 2.2 | 3.9760 | 5.2 | 21.6475 | 8.2 | 53.4562 | 11.2 | 99.4021 | 14.2 | 159.4852 | 17.2 | 233.7055 |
| 2.3 | 4.4302 | 5.3 | 22.6907 | 8.3 | 55.0885 | 11.3 | 101.6234 | 14.3 | 162.2956 | 17.3 | 237.1049 |
| 2.4 | 4.9087 | 5.4 | 23.7583 | 8.4 | 56.7451 | 11.4 | 103.8691 | 14.4 | 165.1303 | 17.4 | 240.5287 |
| 2.5 | 5.4119 | 5.5 | 24.8505 | 8.5 | 58.4264 | 11.5 | 106.1394 | 14.5 | 167.9896 | 17.5 | 243.9771 |
| 2.6 | 5.9395 | 5.6 | 25.9672 | 8.6 | 60.1321 | 11.6 | 108.4342 | 14.6 | 170.8735 | 17.6 | 247.4500 |
| 2.7 | 6.4918 | 5.7 | 27.1085 | 8.7 | 61.8625 | 11.7 | 110.7536 | 14.7 | 173.7820 | 17.7 | 250.9475 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|
| 18.0 | 254.4696 | 25.3 | 505.7117 | 32.6 | 842.3905 | 40.0 | 1256.6400 | 47.3 | 1762.7344 |
| 18.1 | 258.0161 | 25.4 | 510.7063 | 32.7 | 848.8333 | 40.1 | 1264.5062 | 47.4 | 1772.0587 |
| 18.2 | 261.5872 | 25.5 | 515.7255 | | | 40.2 | 1272.3970 | 47.5 | 1781.3976 |
| 18.3 | 265.1829 | 25.6 | 520.7692 | 33.0 | 855.3006 | 40.3 | 1280.3124 | 47.6 | 1790.7610 |
| 18.4 | 268.8031 | 25.7 | 525.8375 | 33.1 | 861.7924 | 40.4 | 1288.2523 | 47.7 | 1800.1490 |
| 18.5 | 272.4479 | | | 33.2 | 868.3087 | 40.5 | 1296.2168 | | |
| 18.6 | 276.1171 | 26.0 | 530.9304 | 33.3 | 874.8497 | 40.6 | 1304.2057 | 48.0 | 1809.5616 |
| 18.7 | 279.8110 | 26.1 | 536.0477 | 33.4 | 881.4151 | 40.7 | 1312.2193 | 48.1 | 1818.9986 |
| | | 26.2 | 541.1896 | 33.5 | 888.0051 | | | 48.2 | 1828.4602 |
| 19.0 | 283.5294 | 26.3 | 546.3561 | 33.6 | 894.6196 | 41.0 | 1320.2574 | 48.3 | 1837.9364 |
| 19.1 | 287.2723 | 26.4 | 551.5471 | 33.7 | 901.2587 | 41.1 | 1328.3200 | 48.4 | 1847.4571 |
| 19.2 | 291.0397 | 26.5 | 556.7627 | | | 41.2 | 1336.4071 | 48.5 | 1856.9924 |
| 19.3 | 294.8312 | 26.6 | 562.0027 | 34.0 | 907.9224 | 41.3 | 1344.5189 | 48.6 | 1866.5521 |
| 19.4 | 298.6482 | 26.7 | 567.2674 | 34.1 | 914.6105 | 41.4 | 1352.6551 | 48.7 | 1876.1365 |
| 19.5 | 302.4894 | | | 34.2 | 921.3232 | 41.5 | 1360.8159 | | |
| 19.6 | 306.3550 | 27.0 | 572.5566 | 34.3 | 928.0605 | 41.6 | 1369.0012 | 49.0 | 1885.7454 |
| 19.7 | 310.2452 | 27.1 | 577.8703 | 34.4 | 934.8223 | 41.7 | 1377.2111 | 49.1 | 1895.3788 |
| | | 27.2 | 583.2085 | 34.5 | 941.6087 | | | 49.2 | 1905.0367 |
| 20.0 | 314.1600 | 27.3 | 588.5714 | 34.6 | 948.4195 | 42.0 | 1385.4456 | 49.3 | 1914.7093 |
| 20.1 | 318.0992 | 27.4 | 593.9587 | 34.7 | 955.2550 | 42.1 | 1393.7045 | 49.4 | 1924.4263 |
| 20.2 | 322.0630 | 27.5 | 599.3706 | | | 42.2 | 1401.9880 | 49.5 | 1934.1579 |
| 20.3 | 326.0514 | 27.6 | 604.8070 | 35.0 | 962.1150 | 42.3 | 1410.2961 | 49.6 | 1943.9140 |
| 20.4 | 330.0643 | 27.7 | 610.2680 | 35.1 | 968.9995 | 42.4 | 1418.6287 | 49.7 | 1953.6947 |
| 20.5 | 334.1018 | | | 35.2 | 975.9085 | 42.5 | 1426.9859 | | |
| 20.6 | 338.1637 | 28.0 | 615.7536 | 35.3 | 982.8422 | 42.6 | 1435.3675 | 50.0 | 1963.5000 |
| 20.7 | 342.2503 | 28.1 | 621.2636 | 35.4 | 989.8003 | 42.7 | 1443.7738 | 50.1 | 1973.3297 |
| | | 28.2 | 626.7982 | 35.5 | 996.7830 | | | 50.2 | 1983.1840 |
| 21.0 | 346.3614 | 28.3 | 632.3574 | 35.6 | 1003.7902 | 43.0 | 1452.2046 | 50.3 | 1993.0529 |
| 21.1 | 350.4970 | 28.4 | 637.9411 | 35.7 | 1010.8220 | 43.1 | 1460.6599 | 50.4 | 2002.9663 |
| 21.2 | 354.6571 | 28.5 | 643.5494 | | | 43.2 | 1469.1397 | 50.5 | 2012.8943 |
| 21.3 | 358.8419 | 28.6 | 649.1821 | 36.0 | 1017.8784 | 43.3 | 1477.6342 | 50.6 | 2022.8467 |
| 21.4 | 363.0511 | 28.7 | 654.8395 | 36.1 | 1024.9592 | 43.4 | 1486.1731 | 50.7 | 2032.8238 |
| 21.5 | 367.2849 | | | 36.2 | 1032.0646 | 43.5 | 1494.7266 | | |
| 21.6 | 371.5432 | 29.0 | 660.5214 | 36.3 | 1039.1946 | 43.6 | 1503.3046 | 51.0 | 2042.8254 |
| 21.7 | 375.8261 | 29.1 | 666.2278 | 36.4 | 1046.3491 | 43.7 | 1511.9072 | 51.1 | 2052.8515 |
| | | 29.2 | 671.9587 | 36.5 | 1053.5281 | | | 51.2 | 2062.9021 |
| 22.0 | 380.1336 | 29.3 | 677.7143 | 36.6 | 1060.7317 | 44.0 | 1520.5344 | 51.3 | 2072.9674 |
| 22.1 | 384.4655 | 29.4 | 683.4943 | 36.7 | 1067.9599 | 44.1 | 1529.1860 | 51.4 | 2083.0771 |
| 22.2 | 388.8220 | 29.5 | 689.2989 | | | 44.2 | 1537.8622 | 51.5 | 2093.2014 |
| 22.3 | 393.2031 | 29.6 | 695.1280 | | | 44.3 | 1546.5530 | 51.6 | 2103.3502 |
| 22.4 | 397.6087 | 29.7 | 700.9817 | 37.0 | 1075.2126 | 44.4 | 1555.2883 | 51.7 | 2113.5236 |
| 22.5 | 402.0388 | | | 37.1 | 1082.4898 | 44.5 | 1564.0382 | | |
| 22.6 | 406.4935 | 30.0 | 706.8600 | 37.2 | 1089.7915 | 44.6 | 1572.8125 | 52.0 | 2123.7216 |
| 22.7 | 410.9728 | 30.1 | 712.7627 | 37.3 | 1097.1179 | 44.7 | 1581.6115 | 52.1 | 2133.9440 |
| | | 30.2 | 718.6900 | 37.4 | 1104.4687 | | | 52.2 | 2144.1910 |
| 23.0 | 415.4766 | 30.3 | 724.6419 | 37.5 | 1111.8441 | 45.0 | 1590.4350 | 52.3 | 2154.4626 |
| 23.1 | 420.0049 | 30.4 | 730.6183 | 37.6 | 1119.2440 | 45.1 | 1599.2830 | 52.4 | 2164.7587 |
| 23.2 | 424.5577 | 30.5 | 736.6193 | 37.7 | 1126.6685 | 45.2 | 1608.1555 | 52.5 | 2175.0794 |
| 23.3 | 429.1352 | 30.6 | 742.6447 | | | 45.3 | 1617.0427 | 52.6 | 2185.4245 |
| 23.4 | 433.7371 | 30.7 | 748.6948 | 38.0 | 1134.1176 | 45.4 | 1625.9743 | 52.7 | 2195.7943 |
| 23.5 | 438.3636 | | | 38.1 | 1141.5911 | 45.5 | 1634.9205 | | |
| 23.6 | 443.0146 | 31.0 | 754.7694 | 38.2 | 1149.0892 | 45.6 | 1643.8912 | 53.0 | 2206.1886 |
| 23.7 | 447.6902 | 31.1 | 760.8685 | 38.3 | 1156.6119 | 45.7 | 1652.8865 | 53.1 | 2216.6074 |
| | | 31.2 | 766.9921 | 38.4 | 1164.1591 | | | 53.2 | 2227.0507 |
| 24.0 | 452.3904 | 31.3 | 773.1404 | 38.5 | 1171.7309 | 46.0 | 1661.9064 | 53.3 | 2237.5187 |
| 24.1 | 457.1150 | 31.4 | 779.3131 | 38.6 | 1179.3271 | 46.1 | 1670.9507 | 53.4 | 2248.0111 |
| 24.2 | 461.8642 | 31.5 | 785.5104 | 38.7 | 1186.9480 | 46.2 | 1680.0196 | 53.5 | 2258.5281 |
| 24.3 | 466.6380 | 31.6 | 791.7322 | | | 46.3 | 1689.1031 | 53.6 | 2269.0696 |
| 24.4 | 471.4363 | 31.7 | 797.9786 | 39.0 | 1194.5934 | 46.4 | 1698.2311 | 53.7 | 2279.6357 |
| 24.5 | 476.2592 | | | 39.1 | 1202.2633 | 46.5 | 1707.3737 | | |
| 24.6 | 481.1065 | 32.0 | 804.2496 | 39.2 | 1209.9577 | 46.6 | 1716.5407 | 54.0 | 2290.2264 |
| 24.7 | 485.9785 | 32.1 | 810.5450 | 39.3 | 1217.6768 | 46.7 | 1725.7324 | 54.1 | 2300.8415 |
| | | 32.2 | 816.8650 | 39.4 | 1225.4203 | | | 54.2 | 2311.4812 |
| 25.0 | 490.8750 | 32.3 | 823.2096 | 39.5 | 1233.1884 | 47.0 | 1734.9486 | 54.3 | 2322.1455 |
| 25.1 | 495.7960 | 32.4 | 829.5787 | 39.6 | 1240.9810 | 47.1 | 1744.1893 | 54.4 | 2332.8343 |
| 25.2 | 500.7415 | 32.5 | 835.9724 | 39.7 | 1248.7982 | 47.2 | 1753.4545 | 54.5 | 2343.5477 |

| Diam. | Area | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|
| 54.6 | 2354.2855 | 62.0 | 3019.0776 | 69.3 | 3780.0443 | 76.6 | 4626.4477 | 84.0 | 5541.7824 |
| 54.7 | 2365.0480 | 62.1 | 3031.2635 | 69.4 | 3793.6783 | 76.7 | 4641.5299 | 84.1 | 5558.2881 |
| | | 62.2 | 3043.4740 | 69.5 | 3807.3369 | | | 84.2 | 5574.8162 |
| 55.0 | 2375.8350 | 62.3 | 3055.7091 | 69.6 | 3821.0200 | 77.0 | 4656.6366 | 84.3 | 5591.3730 |
| 55.1 | 2386.6465 | 62.4 | 3067.9687 | 69.7 | 3834.7277 | 77.1 | 4671.7678 | 84.4 | 5607.9523 |
| 55.2 | 2397.4825 | 62.5 | 3080.2529 | | | 77.2 | 4686.9215 | 84.5 | 5624.5554 |
| 55.3 | 2408.3432 | 62.6 | 3092.5615 | 70.0 | 3848.4600 | 77.3 | 4702.1039 | 84.6 | 5641.1845 |
| 55.4 | 2419.2283 | 62.7 | 3104.8948 | 70.1 | 3862.2167 | 77.4 | 4717.3087 | 84.7 | 5657.8357 |
| 55.5 | 2430.1830 | | | 70.2 | 3875.9960 | 77.5 | 4732.5381 | | |
| 55.6 | 2441.0722 | 63.0 | 3117.2526 | 70.3 | 3889.8039 | 77.6 | 4747.7920 | 85.0 | 5674.5150 |
| 55.7 | 2452.0310 | 63.1 | 3129.6349 | 70.4 | 3903.6343 | 77.7 | 4763.0705 | 85.1 | 5691.2170 |
| | | 63.2 | 3142.0417 | 70.5 | 3917.4893 | | | 85.2 | 5707.9415 |
| 56.0 | 2463.0144 | 63.3 | 3154.4732 | 70.6 | 3931.3687 | 78.0 | 4778.3736 | 85.3 | 5724.6947 |
| 56.1 | 2474.0222 | 63.4 | 3166.9291 | 70.7 | 3945.2728 | 78.1 | 4793.7012 | 85.4 | 5741.4703 |
| 56.2 | 2485.0546 | 63.5 | 3179.4096 | | | 78.2 | 4809.0512 | 85.5 | 5758.2697 |
| 56.3 | 2496.1116 | 63.6 | 3191.9146 | 71.0 | 3959 2014 | 78.3 | 4824.4299 | 85.6 | 5775.0952 |
| 56.4 | 2507.1931 | 63.7 | 3204.4442 | 71.1 | 3973.1545 | 78.4 | 4839.8311 | 85.7 | 5791.9445 |
| 56.5 | 2518.2992 | | | 71.2 | 3987.1301 | 78.5 | 4855.2568 | | |
| 56.6 | 2529.4297 | 64.0 | 3216.9984 | 71.3 | 4001.1344 | 78.6 | 4870.7071 | 86.0 | 5808.8184 |
| 56.7 | 2540.5849 | 64.1 | 3229.5770 | 71.4 | 4015.1611 | 78.7 | 4886.1820 | 86.1 | 5825.7168 |
| | | 64.2 | 3242.1782 | 71.5 | 4029.2124 | | | 86.2 | 5842.6376 |
| 57.0 | 2551.7646 | 64.3 | 3254.8080 | 71.6 | 4043.2882 | 79.0 | 4901.6814 | 86.3 | 5859.5871 |
| 57.1 | 2562.9688 | 64.4 | 3267.4603 | 71.7 | 4057.3886 | 79.1 | 4917.2053 | 86.4 | 5876.5591 |
| 57.2 | 2574.1975 | 64.5 | 3280.1372 | | | 79.2 | 4932.7517 | 86.5 | 5893.5549 |
| 57.3 | 2585.4509 | 64.6 | 3292.8385 | 72.0 | 4071.5136 | 79.3 | 4948.3268 | 86.6 | 5910.5767 |
| 57.4 | 2596.7287 | 64.7 | 3305.5645 | 72.1 | 4085.6631 | 79.4 | 4963.9243 | 86.7 | 5927.6224 |
| 57.5 | 2608.0311 | | | 72.2 | 4099.8350 | 79.5 | 4979.5456 | | |
| 57.6 | 2619.3580 | 65.0 | 3318.3150 | 72.3 | 4114.0356 | 79.6 | 4995.1930 | 87.0 | 5944.6926 |
| 57.7 | 2630.7095 | 65.1 | 3331.0900 | 72.4 | 4128.2587 | 79.7 | 5010.8642 | 87.1 | 5961.7873 |
| | | 65.2 | 3343.8875 | 72.5 | 4142.5064 | | | 87.2 | 5978.9045 |
| 58.0 | 2642.0856 | 65.3 | 3356.7137 | 72.6 | 4156.7785 | 80.0 | 5026.5600 | 87.3 | 5996.0504 |
| 58.1 | 2653.4861 | 65.4 | 3369.5623 | 72.7 | 4171.0753 | 80.1 | 5042.2803 | 87.4 | 6013.2187 |
| 58.2 | 2664.9112 | 65.5 | 3382.4355 | | | 80.2 | 5058.0230 | 87.5 | 6030.4108 |
| 58.3 | 2676.3609 | 65.6 | 3395.3332 | 73.0 | 4185.3966 | 80.3 | 5073.7944 | 87.6 | 6047.6290 |
| 58.4 | 2687.8351 | 65.7 | 3408.2555 | 73.1 | 4199.7424 | 80.4 | 5089.5883 | 87.7 | 6064.8710 |
| 58.5 | 2699.3338 | | | 73.2 | 4214.1107 | 80.5 | 5105.4060 | | |
| 58.6 | 2710.8571 | 66.0 | 3421.2024 | 73.3 | 4228.5077 | 80.6 | 5121.2497 | 88.0 | 6082.1376 |
| 58.7 | 2722.4050 | 66.1 | 3434.1737 | 73.4 | 4242.9271 | 80.7 | 5137.1173 | 88.1 | 6099.4287 |
| | | 66.2 | 3447.1676 | 73.5 | 4257.3711 | | | 88.2 | 6116.7422 |
| | | 66.3 | 3460.1901 | 73.6 | 4271.8396 | | | 88.3 | 6134.0844 |
| 59.0 | 2733.9774 | 66.4 | 3473.2351 | 73.7 | 4286.3327 | 81.0 | 5153.0094 | 88.4 | 6151.4491 |
| 59.1 | 2745.5743 | 66.5 | 3486.3047 | | | 81.1 | 5168.9260 | 88.5 | 6168.8376 |
| 59.2 | 2757.1957 | 66.6 | 3499.3987 | 74.0 | 4300.8504 | 81.2 | 5184.8651 | 88.6 | 6186.2521 |
| 59.3 | 2768.8418 | 66.7 | 3512.5174 | 74.1 | 4315.3926 | 81.3 | 5200.8329 | 88.7 | 6203.6905 |
| 59.4 | 2780.5123 | | | 74.2 | 4329.9572 | 81.4 | 5216.8231 | | |
| 59.5 | 2792.2074 | 67.0 | 3525.6606 | 74.3 | 4344.5505 | 81.5 | 5232.8371 | 89.0 | 6221.1534 |
| 59.6 | 2803.9270 | 67.1 | 3538.8283 | 74.4 | 4359.1663 | 81.6 | 5248.8772 | 89.1 | 6238.6408 |
| 59.7 | 2815.6712 | 67.2 | 3552.0185 | 74.5 | 4373.8067 | 81.7 | 5264.9411 | 89.2 | 6256.1507 |
| | | 67.3 | 3565.2374 | 74.6 | 4388.4715 | | | 89.3 | 6273.6893 |
| 60.0 | 2827.4400 | 67.4 | 3578.4787 | 74.7 | 4403.1610 | 82.0 | 5281.0296 | 89.4 | 6291.2503 |
| 60.1 | 2839.2332 | 67.5 | 3591.7446 | | | 82.1 | 5297.1426 | 89.5 | 6308.8351 |
| 60.2 | 2851.0510 | 67.6 | 3605.0350 | 75.0 | 4417.8750 | 82.2 | 5313.2780 | 89.6 | 6326.4460 |
| 60.3 | 2862.8934 | 67.7 | 3618.3500 | 75.1 | 4432.6135 | 82.3 | 5329.4421 | 89.7 | 6344.0807 |
| 60.4 | 2874.7603 | | | 75.2 | 4447.3745 | 82.4 | 5345.6287 | | |
| 60.5 | 2886.6517 | 68.0 | 3631.6896 | 75.3 | 4462.1642 | 82.5 | 5361.8391 | 90.0 | 6361.7400 |
| 60.6 | 2898.5677 | 68.1 | 3645.0536 | 75.4 | 4476.9763 | 82.6 | 5378.0755 | 90.1 | 6379.4238 |
| 60.7 | 2910.5083 | 68.2 | 3658.4402 | 75.5 | 4491.8130 | 82.7 | 5394.3358 | 90.2 | 6397.1300 |
| | | 68.3 | 3671.8554 | 75.6 | 4506.6742 | | | 90.3 | 6414.8649 |
| 61.0 | 2922.4734 | 68.4 | 3685.2931 | 75.7 | 4521.5600 | 83.0 | 5410.6206 | 90.4 | 6432.6223 |
| 61.1 | 2934.4630 | 68.5 | 3698.7554 | | | 83.1 | 5426.9299 | 90.5 | 6450.4039 |
| 61.2 | 2946.4771 | 68.6 | 3712.2421 | 76.0 | 4536.4704 | 83.2 | 5443.2617 | 90.6 | 6468.2107 |
| 61.3 | 2958.5159 | 68.7 | 3725.7535 | 76.1 | 4551.4023 | 83.3 | 5459.6222 | 90.7 | 6486.0418 |
| 61.4 | 2970.5791 | | | 76.2 | 4566.3626 | 83.4 | 5476.0051 | | |
| 61.5 | 2982.6669 | 69.0 | 3739.2894 | 76.3 | 4581.3486 | 83.5 | 5492.4118 | 91.0 | 6503.8974 |
| *61.6* | *2994.7792* | *69.1* | *3752.8498* | 76.4 | 4596.3571 | 83.6 | 5508.8446 | 91.1 | 6521.7775 |
| *61.7* | *3006.9161* | *69.2* | *3766.4327* | 76.5 | 4611.3902 | 83.7 | 5525.3012 | 91.2 | 6539.6801 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area |
|---|---|---|---|---|---|---|---|---|---|
| 91.3 | 6557.6114 | 93.3 | 6847.8167 | 95.3 | 7144.3052 | 97.3 | 7447.0769 | 99.3 | 7756.1318 |
| 91.4 | 6575.5651 | 93.4 | 6866.1631 | 95.4 | 7163.0443 | 97.4 | 7466.2087 | 99.4 | 7775.6563 |
| 91.5 | 6593.5431 | 93.5 | 6884.5338 | 95.5 | 7181.8077 | 97.5 | 7485.3648 | 99.5 | 7795.2051 |
| 91.6 | 6611.5462 | 93.6 | 6902.9296 | 95.6 | 7200.5962 | 97.6 | 7504.5460 | 99.6 | 7814.7790 |
| 91.7 | 6629.5736 | 93.7 | 6921.3497 | 95.7 | 7219.4090 | 97.7 | 7523.7515 | 99.7 | 7834.3772 |
| 92.0 | 6647.6258 | 94.0 | 6939.7946 | 96.0 | 7238.2466 | 98 0 | 7542.9818 | 100.0 | 7854.0000 |
| 92.1 | 6665 7021 | 94.1 | 6958.2636 | 96.1 | 7257.1083 | 98.1 | 7562.2362 | 100.1 | 7873.6473 |
| 92.2 | 6683.8010 | 94.2 | 6976.7552 | 96.2 | 7275.9926 | 98.2 | 7581 5132 | 100.2 | 7893.3179 |
| 92.3 | 6701.9286 | 94.3 | 6995.2755 | 96.3 | 7294.9056 | 98.3 | 7600 8189 | 100.3 | 7913.0157 |
| 92.4 | 6720.0787 | 94.4 | 7013.8183 | 96.4 | 7313.8411 | 98.4 | 7620.1471 | 100 4 | 7932.7363 |
| 92.5 | 6738.2530 | 94.5 | 7032.3853 | 96.5 | 7332.8008 | 98.5 | 7639.4995 | 100.5 | 7952.4821 |
| 92.6 | 6756.4525 | 94.6 | 7050.9775 | 96.6 | 7351.7857 | 98.6 | 7658.8771 | 100.6 | 7972.2518 |
| 92.7 | 6774.6763 | 94.7 | 7069.5940 | 96.7 | 7370.7949 | 98.7 | 7678.2790 | 100.7 | 7992.0466 |
| 93.0 | 6792.9248 | 95.0 | 7088.2352 | 97.0 | 7389.8288 | 99.0 | 7697.7056 | 101.0 | 8011.8654 |
| 93.1 | 6811.1974 | 95.1 | 7106.9005 | 97.1 | 7408.8868 | 99.1 | 7717.1563 | | |
| 93.2 | 6829.4927 | 95.2 | 7125.5885 | 97.2 | 7427.9675 | 99.2 | 7736.6297 | | |

## TABLE VII.

**Showing by inspection the Areas of all Circles from 1 to 50, advancing by 1-12.**

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area |
|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.7854 | 4.0 | 12.5664 | 7.0 | 38.4846 | 10.0 | 78.5400 | 13.0 | 132.7326 |
| 1.1 | 0.9217 | 4.1 | 13.0952 | 7.1 | 39.4060 | 10.1 | 79.8540 | 13.1 | 134.4391 |
| 1.2 | 1.0690 | 4.2 | 13.6353 | 7.2 | 40.3388 | 10.2 | 81.1795 | 13.2 | 136.1574 |
| 1.3 | 1.2271 | 4.3 | 14.1862 | 7.3 | 41.2825 | 10.3 | 82.5160 | 13.3 | 137.8867 |
| 1.4 | 1.3962 | 4.4 | 14.7479 | 7.4 | 42.2367 | 10.4 | 83.8627 | 13.4 | 139.6260 |
| 1.5 | 1.5761 | 4.5 | 15.3206 | 7.5 | 43.2022 | 10.5 | 85.2211 | 13.5 | 141.3771 |
| 1.6 | 1.7671 | 4.6 | 15.9043 | 7.6 | 44.1787 | 10.6 | 86.5903 | 13.6 | 143.1391 |
| 1.7 | 1.9689 | 4.7 | 16.4986 | 7.7 | 45.1656 | 10.7 | 87.9697 | 13.7 | 144.9111 |
| 1.8 | 2.1816 | 4.8 | 17.1041 | 7.8 | 46.1638 | 10.8 | 89.3608 | 13.8 | 146.6949 |
| 1.9 | 2.4052 | 4.9 | 17.7205 | 7.9 | 47.1730 | 10.9 | 90.7627 | 13.9 | 148.4896 |
| 1.10 | 2.6398 | 4.10 | 18.3476 | 7.10 | 48.1926 | 10.10 | 92.1749 | 13.10 | 150.2943 |
| 1.11 | 2.8852 | 4.11 | 18.9858 | 7.11 | 49.2236 | 10.11 | 93.5986 | 13.11 | 152.1109 |
| 2.0 | 3.1416 | 5.0 | 19.6350 | 8.0 | 50.2656 | 11.0 | 95.0334 | 14.0 | 153.9384 |
| 2.1 | 3.4087 | 5.1 | 20.2947 | 8.1 | 51.3178 | 11.1 | 96.4783 | 14.1 | 155.7758 |
| 2.2 | 3.6869 | 5.2 | 20.9656 | 8.2 | 52.3816 | 11.2 | 97.9347 | 14.2 | 157.6250 |
| 2.3 | 3.9760 | 5.3 | 21.6475 | 8.3 | 53.4562 | 11.3 | 99.4021 | 14.3 | 159.4852 |
| 2.4 | 4.2760 | 5.4 | 22.3400 | 8.4 | 54.5412 | 11.4 | 100.8797 | 14.4 | 161.3553 |
| 2.5 | 4.5869 | 5.5 | 23.0437 | 8.5 | 55.6377 | 11.5 | 102.3689 | 14.5 | 163.2373 |
| 2.6 | 4.9087 | 5.6 | 23.7583 | 8.6 | 56.7451 | 11.6 | 103.8691 | 14.6 | 165.1303 |
| 2.7 | 5.2413 | 5.7 | 24.4835 | 8.7 | 57.8628 | 11.7 | 105.3794 | 14.7 | 167.0331 |
| 2.8 | 5.5850 | 5.8 | 25.2199 | 8.8 | 58.9920 | 11.8 | 106.9013 | 14.8 | 168.9479 |
| 2.9 | 5.9395 | 5.9 | 25.9672 | 8.9 | 60.1321 | 11.9 | 108.4342 | 14.9 | 170.8735 |
| 2.10 | 6.3049 | 5.10 | 26.7251 | 8.10 | 61.2826 | 11.10 | 109.9772 | 14.10 | 172.8091 |
| 2.11 | 6.6813 | 5.11 | 27.4943 | 8.11 | 62.4445 | 11.11 | 111.5319 | 14.11 | 174.7565 |
| 3.0 | 7.0686 | 6.0 | 28.2744 | 9.0 | 63.6174 | 12.0 | 113.0976 | 15.0 | 176.7150 |
| 3.1 | 7.4666 | 6.1 | 29.0649 | 9.1 | 64.8006 | 12.1 | 114.6732 | 15.1 | 178.6832 |
| 3.2 | 7.8757 | 6.2 | 29.8668 | 9.2 | 65.9951 | 12.2 | 116.2607 | 15.2 | 180.6634 |
| 3.3 | 8.2957 | 6.3 | 30.6796 | 9.3 | 67.2007 | 12.3 | 117.8590 | 15.3 | 182.6545 |
| 3.4 | 8.7265 | 6.4 | 31.5029 | 9.4 | 68.4166 | 12.4 | 119.4674 | 15.4 | 184.6555 |
| 3.5 | 9.1683 | 6.5 | 32.3376 | 9.5 | 69.6440 | 12.5 | 121.0876 | 15.5 | 186.6684 |
| 3.6 | 9.6211 | 6.6 | 33.1831 | 9.6 | 70.8823 | 12.6 | 122.7187 | 15.6 | 188.6923 |
| 3.7 | 10.0846 | 6.7 | 34.0391 | 9.7 | 72.1309 | 12.7 | 124.3598 | 15.7 | 190.7260 |
| 3.8 | 10.5591 | 6.8 | 34.9065 | 9.8 | 73.3910 | 12.8 | 126.0127 | 15.8 | 192.7716 |
| 3.9 | 11.0446 | 6.9 | 35.7847 | 9.9 | 74.6620 | 12.9 | 127.6765 | 15.9 | 194.8282 |
| 3.10 | 11.5409 | 6.10 | 36.6735 | 9.10 | 75.9433 | 12.10 | 129.3504 | 15.10 | 196.8946 |
| 3.11 | 12.0481 | 6.11 | 37.5736 | 9.11 | 77.2362 | 12.11 | 131.0360 | 15.11 | 198.9730 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|
| 16.0 | 201.0624 | 21.0 | 346.3614 | 26.0 | 530.9304 | 31.0 | 754.7694 | 36.0 | 1017.8784 |
| 16.1 | 203.1615 | 21.1 | 349.1147 | 26.1 | 534.3379 | 31.1 | 758.8311 | 36.1 | 1022.5944 |
| 16.2 | 205.2726 | 21.2 | 351.8804 | 26.2 | 537.7583 | 31.2 | 762.9062 | 36.2 | 1027.3240 |
| 16.3 | 207.3946 | 21.3 | 354.6571 | 26.3 | 541.1896 | 31.3 | 766.9921 | 36.3 | 1032.0646 |
| 16.4 | 209.5264 | 21.4 | 357.4432 | 26.4 | 544.6299 | 31.4 | 771.0866 | 36.4 | 1036.8134 |
| 16.5 | 211.6703 | 21.5 | 360.2417 | 26.5 | 548.0830 | 31.5 | 775.1944 | 36.5 | 1041 5758 |
| 16.6 | 213.8251 | 21.6 | 363.0511 | 26.6 | 551.5471 | 31.6 | 779.3131 | 36.6 | 1046.3491 |
| 16.7 | 215.9896 | 21.7 | 365.8698 | 26.7 | 555.0201 | 31.7 | 783.4403 | 36.7 | 1051.1306 |
| 16.8 | 218.1662 | 21.8 | 368.7011 | 26.8 | 558.5059 | 31.8 | 787.5808 | 36.8 | 1055.9257 |
| 16.9 | 220.3537 | 21.9 | 371.5432 | 26.9 | 562.0027 | 31.9 | 791.7322 | 36.9 | 1060.7317 |
| 16.10 | 222.5510 | 21.10 | 374.3947 | 26.10 | 565.5084 | 31.10 | 795.8922 | 36.10 | 1065.5459 |
| 16.11 | 224.7603 | 21.11 | 377.2587 | 26.11 | 569.0270 | 31.11 | 800.0654 | 36.11 | 1070.3738 |
| 17.0 | 226.9806 | 22.0 | 380.1336 | 27.0 | 572.5566 | 32.0 | 804.2496 | 37.0 | 1075.2126 |
| 17.1 | 229.2105 | 22.1 | 383.0177 | 27.1 | 576.0949 | 32.1 | 808.4422 | 37.1 | 1080.0594 |
| 17.2 | 231.4525 | 22.2 | 385.9144 | 27.2 | 579.6463 | 32.2 | 812.6481 | 37.2 | 1084.9201 |
| 17.3 | 233.7055 | 22.3 | 388.8220 | 27.3 | 583.2085 | 32.3 | 816.8650 | 37.3 | 1089.7915 |
| 17.4 | 235.9682 | 22.4 | 391.7389 | 27.4 | 586.7796 | 32.4 | 821.0904 | 37.4 | 1094.6711 |
| 17.5 | 238.2430 | 22.5 | 394.6683 | 27.5 | 590.3637 | 32.5 | 825.3291 | 37.5 | 1099.5644 |
| 17.6 | 240.5287 | 22.6 | 397.6087 | 27.6 | 593.9587 | 32.6 | 829.5787 | 37.6 | 1104.4687 |
| 17 7 | 242.8241 | 22.7 | 400.5583 | 27.7 | 597.5625 | 32.7 | 833.8368 | 37.7 | 1109.3810 |
| 17.8 | 245.1316 | 22.8 | 403.5204 | 27.8 | 601.1793 | 32.8 | 838.1082 | 37.8 | 1114.3071 |
| 17.9 | 247.4500 | 22.9 | 406.4935 | 27.9 | 604.8070 | 32.9 | 842.3905 | 37.9 | 1119.2440 |
| 17.10 | 249.7781 | 22.10 | 409.4759 | 27.10 | 608.4436 | 32.10 | 846.6813 | 37.10 | 1124.1891 |
| 17.11 | 252.1184 | 22.11 | 412.4707 | 27.11 | 612.0931 | 32.11 | 850.9855 | 37.11 | 1129.1478 |
| 18.0 | 254.4696 | 23.0 | 415.4766 | 28.0 | 615.7536 | 33.0 | 855.3006 | 38.0 | 1134.1176 |
| 18.1 | 256.8303 | 23.1 | 418.4915 | 28.1 | 619.4228 | 33.1 | 859.6240 | 38.1 | 1139.0953 |
| 18.2 | 259.2033 | 23.2 | 421.5192 | 28.2 | 623.1050 | 33.2 | 863.9609 | 38.2 | 1144.0868 |
| 18.3 | 261.5872 | 23.3 | 424.5577 | 28.3 | 626.7982 | 33.3 | 868.3087 | 38.3 | 1149.0892 |
| 18.4 | 263.9807 | 23.4 | 427.6055 | 28.4 | 630.5002 | 33.4 | 872.6649 | 38.4 | 1154.0997 |
| 18.5 | 266.3864 | 23.5 | 430.6658 | 28.5 | 634.2152 | 33.5 | 877.0346 | 38.5 | 1159.1239 |
| 18.6 | 268.8031 | 23.6 | 433.7371 | 28.6 | 637.9411 | 33.6 | 881.4151 | 38.6 | 1164.1591 |
| 18.7 | 271.2293 | 23.7 | 436.8175 | 28.7 | 641.6758 | 33.7 | 885.8040 | 38.7 | 1169.2023 |
| 18.8 | 273.6678 | 23.8 | 439.9106 | 28.8 | 645.4235 | 33.8 | 890.2064 | 38.8 | 1174.2592 |
| 18.9 | 276.1171 | 23.9 | 443.0146 | 28.9 | 649.1821 | 33.9 | 894.6196 | 38.9 | 1179.3271 |
| 18.10 | 278.5761 | 23.10 | 446.1278 | 28.10 | 652.9495 | 33.10 | 899.0413 | 38.10 | 1184.4030 |
| 18.11 | 281.0472 | 23.11 | 449.2536 | 28.11 | 656.7300 | 33.11 | 903.4763 | 38.11 | 1189.4927 |
| 19.0 | 283.5294 | 24.0 | 452.3904 | 29.0 | 660.5214 | 34.0 | 907.9224 | 39.0 | 1194.5934 |
| 19.1 | 286.0210 | 24.1 | 455.5362 | 29.1 | 664.3214 | 34.1 | 912.3767 | 39.1 | 1199.7195 |
| 19.2 | 288.5249 | 24.2 | 458.6948 | 29.2 | 668.1346 | 34.2 | 916.8445 | 39.2 | 1204.8244 |
| 19.3 | 291.0397 | 24.3 | 461.8642 | 29.3 | 671.9587 | 34.3 | 921.3232 | 39.3 | 1209.9577 |
| 19.4 | 293.5641 | 24.4 | 465.0428 | 29.4 | 675.7915 | 34.4 | 925.8103 | 39.4 | 1215.0990 |
| 19.5 | 296.1007 | 24.5 | 468.2341 | 29.5 | 679.6375 | 34.5 | 930.3108 | 39.5 | 1220.2542 |
| 19.6 | 298.6483 | 24.6 | 471.4363 | 29.6 | 683.4943 | 34.6 | 934.8223 | 39.6 | 1225.4203 |
| 19.7 | 301.2054 | 24.7 | 474.6476 | 29.7 | 687.3598 | 34.7 | 939.3421 | 39.7 | 1230.5943 |
| 19.8 | 303.7747 | 24.8 | 477.8716 | 29.8 | 691.2385 | 34.8 | 943.8753 | 39.8 | 1235.7822 |
| 19.9 | 306.3550 | 24.9 | 481.1065 | 29.9 | 695.1280 | 34.9 | 948.4195 | 39.9 | 1240.9810 |
| 19.10 | 308.9448 | 24.10 | 484.3506 | 29.10 | 699.0263 | 34.10 | 952.9720 | 39.10 | 1246.1878 |
| 19.11 | 311.5469 | 24.11 | 487.6073 | 29.11 | 702.9377 | 34.11 | 957.5380 | 39.11 | 1251.4084 |
| 20.0 | 314.1600 | 25.0 | 490.8750 | 30.0 | 706.8600 | 35.0 | 962.1150 | 40.0 | 1256.6400 |
| 20.1 | 316.7824 | 25.1 | 494.1516 | 30.1 | 710.7909 | 35.1 | 966.7001 | 40.1 | 1261.8794 |
| 20.2 | 319.4173 | 25.2 | 497.4411 | 30.2 | 714.7350 | 35.2 | 971.2989 | 40.2 | 1267.1327 |
| 20.3 | 322.0630 | 25.3 | 500.7415 | 30.3 | 718.6900 | 35.3 | 975.9085 | 40.3 | 1272.3970 |
| 20.4 | 324.7182 | 25.4 | 504.0510 | 30.4 | 722.6537 | 35.4 | 980.5264 | 40.4 | 1277.6692 |
| 20.5 | 327.3858 | 25.5 | 507.3732 | 30.5 | 726.6305 | 35.5 | 985.1579 | 40.5 | 1282.9553 |
| 20.6 | 330.0643 | 25.6 | 510.7063 | 30.6 | 730.6183 | 35.6 | 989.8003 | 40.6 | 1288.2523 |
| 20.7 | 332.7522 | 25.7 | 514.0484 | 30.7 | 734.6147 | 35.7 | 994.4509 | 40.7 | 1293.5572 |
| 20.8 | 335.4525 | 25.8 | 517.4034 | 30.8 | 738.6242 | 35.8 | 999.1151 | 40.8 | 1298.8760 |
| 20.9 | 338.1637 | 25.9 | 520.7692 | 30.9 | 742.6447 | 35 9 | 1003.7902 | 40.9 | 1304.2057 |
| 20.10 | 340.8844 | 25.10 | 524.1441 | 30.10 | 746.6738 | 35.10 | 1008.4736 | 40.10 | 1309.5433 |
| 20.11 | 343.6174 | 25.11 | 527.5318 | 30.11 | 750.7161 | 35.11 | 1013.1705 | 40.11 | 1314.8949 |

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|
| 41.0 | 1320.2574 | 42.11 | 1446.5802 | 44.9 | 1572.8125 | 46.7 | 1704.3210 | 48.5 | 1841.1127 |
| 41.1 | 1325.6276 | | | 44.10 | 1578.6735 | 46.8 | 1710.4254 | 48.6 | 1847.4571 |
| 41.2 | 1331.0119 | 43.0 | 1452.2046 | 44.11 | 1584.5488 | 46.9 | 1716.5407 | 48.7 | 1853.8087 |
| 41.3 | 1336.4071 | 43.1 | 1457.8365 | | | 46.10 | 1722.6634 | 48.8 | 1860.1750 |
| 41.4 | 1341.8101 | 43.2 | 1463.4827 | 45.0 | 1590.4350 | 46.11 | 1728.8005 | 48.9 | 1866.5521 |
| 41.5 | 1347.2271 | 43.3 | 1469.1397 | 45.1 | 1596.3286 | | | 48.10 | 1872.9365 |
| 41.6 | 1352.6551 | 43.4 | 1474.8044 | 45.2 | 1602.2366 | 47.0 | 1734.9486 | 48.11 | 1879.3355 |
| 41.7 | 1358.0908 | 43.5 | 1480.4833 | 45.3 | 1608.1555 | 47.1 | 1741.1039 | | |
| 41.8 | 1363.5406 | 43.6 | 1486.1731 | 45.4 | 1614.0819 | 47.2 | 1747.2738 | 49.0 | 1885.7454 |
| 41.9 | 1369.0012 | 43.7 | 1491.8705 | 45.5 | 1620.0226 | 47.3 | 1753.4545 | 49.1 | 1892.1724 |
| 41.10 | 1374.4697 | 43.8 | 1497.5821 | 45.6 | 1625.9743 | 47.4 | 1759.6426 | 49.2 | 1898.5041 |
| 41.11 | 1379.9521 | 43.9 | 1503.3046 | 45.7 | 1631.9334 | 47.5 | 1765.8452 | 49.3 | 1905.0367 |
| | | 43.10 | 1509.0348 | 45.8 | 1637.9068 | 47.6 | 1772.0587 | 49.4 | 1911.4965 |
| 42.0 | 1385.4456 | 43.11 | 1514.7791 | 45.9 | 1643.8912 | 47.7 | 1778.2795 | 49.5 | 1917.9609 |
| 42.1 | 1390.2467 | | | 45.10 | 1649.8831 | 47.8 | 1784.5148 | 49.6 | 1924.4263 |
| 42.2 | 1396.4619 | 44.0 | 1520.5344 | 45.11 | 1655.8892 | 47.9 | 1790.7610 | 49.7 | 1930.9188 |
| 42.3 | 1401.9680 | 44.1 | 1526.2971 | | | 47.10 | 1797.0145 | 49.8 | 1937.3159 |
| 42.4 | 1407.5219 | 44.2 | 1532.0742 | 46.0 | 1661.9064 | 47.11 | 1803.2826 | 49.9 | 1943.9140 |
| 42.5 | 1413.0698 | 44.3 | 1537.8622 | 46.1 | 1667.9308 | | | 49.10 | 1950.4392 |
| 42.6 | 1418.6287 | 44.4 | 1543.6578 | 46.2 | 1673.9698 | 48.0 | 1809.5616 | 49.11 | 1956.9691 |
| 42.7 | 1424.1952 | 44.5 | 1549.4676 | 46.3 | 1680.0196 | 48.1 | 1815.8477 | | |
| 42.8 | 1429.7759 | 44.6 | 1555.2883 | 46.4 | 1686.0769 | 48.2 | 1822.1485 | 50.0 | 1963.5000 |
| 42.9 | 1435.3675 | 44.7 | 1561.1165 | 46.5 | 1692.1485 | 48.3 | 1828.4602 | | |
| 42.10 | 1440.9668 | 44.8 | 1566.9591 | 46.6 | 1698.2311 | 48.4 | 1834.7791 | | |

## TABLE VIII.

**Showing by inspection the Areas of all Spheres from 4-8 to 12, advancing by 1-8.**

| Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam | Area. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 2.0 | 12.5664 | 4.0 | 50.2656 | 6.0 | 113.0976 | 8.0 | 201.0624 | 10.0 | 314.1600 |
| | | 2.1 | 14.1862 | 4.1 | 53.4562 | 6.1 | 117.8590 | 8.1 | 207.3946 | 10.1 | 322.0630 |
| | | 2.2 | 15.9043 | 4.2 | 56.7451 | 6.2 | 122.7187 | 8.2 | 213.8251 | 10.2 | 330.0643 |
| | | 2.3 | 17.7205 | 4.3 | 60.1321 | 6.3 | 127.6765 | 8.3 | 220.3537 | 10.3 | 338.1637 |
| 0.4 | 0.7854 | 2.4 | 19.6350 | 4.4 | 63.6174 | 6.4 | 132.7326 | 8.4 | 226.9806 | 10.4 | 346.3614 |
| 0.5 | 1.2271 | 2.5 | 21.6475 | 4.5 | 67.2007 | 6.5 | 137.8867 | 8.5 | 233.7055 | 10.5 | 354.6571 |
| 0.6 | 1.7671 | 2.6 | 23.7583 | 4.6 | 70.8823 | 6.6 | 143.1391 | 8.6 | 240.5287 | 10.6 | 363.0511 |
| 0.7 | 2.4052 | 2.7 | 25.9672 | 4.7 | 74.6620 | 6.7 | 148.4896 | 8.7 | 247.4500 | 10.7 | 371.5432 |
| | | | | | | | | | | 11.0 | 380.1336 |
| 1.0 | 3.1416 | 3.0 | 28.2744 | 5.0 | 78.5400 | 7.0 | 153.9384 | 9.0 | 254.4696 | 11.1 | 388.8220 |
| 1.1 | 3.9760 | 3.1 | 30.6796 | 5.1 | 82.5160 | 7.1 | 159.4852 | 9.1 | 261.5872 | 11.2 | 397.6087 |
| 1.2 | 4.9087 | 3.2 | 33.1831 | 5.2 | 86.5903 | 7.2 | 165.1303 | 9.2 | 268.8031 | 11.3 | 406.4935 |
| 1.3 | 5.9395 | 3.3 | 35.7847 | 5.3 | 90.7627 | 7.3 | 170.8735 | 9.3 | 276.1171 | 11.4 | 415.4766 |
| 1.4 | 7.0686 | 3.4 | 38.4846 | 5.4 | 95.0334 | 7.4 | 176.7150 | 9.4 | 283.5294 | 11.5 | 424.5576 |
| 1.5 | 8.2957 | 3.5 | 41.2825 | 5.5 | 99.4021 | 7.5 | 182.6545 | 9.5 | 291.0397 | 11.6 | 433.7371 |
| 1.6 | 9.6211 | 3.6 | 44.1787 | 5.6 | 103.8691 | 7.6 | 188.6923 | 9.6 | 298.6483 | 11.7 | 443.0146 |
| 1.7 | 11.0446 | 3.7 | 47.1730 | 5.7 | 108.4342 | 7.7 | 194.8282 | 9.7 | 306.3550 | 12.0 | 452.3904 |

## TABLE IX.

**Showing by inspection the Solidity of Spheres from 4-8 to 12, advancing by 1-8.**

| Diam | Solidity. | Diam. | Solidity. | Diam. | Solidity. | Diam. | Solidity. | Diam. | Solidity. | Diam. | Solidity. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1 0 | 0.5236 | 2.0 | 4.1888 | 3.0 | 14.1372 | 4.0 | 33.5104 | 5.0 | 65.4500 |
| | | 1.1 | 0.7455 | 2.1 | 5.0243 | 3.1 | 15.9790 | 4.1 | 36.7511 | 5.1 | 70.4824 |
| | | 1.2 | 1.0226 | 2.2 | 5.9640 | 3.2 | 17.9742 | 4.2 | 40.1944 | 5.2 | 75.7664 |
| | | 1.3 | 1.3611 | 2.3 | 7.0143 | 3.3 | 20.1289 | 4.3 | 43.8463 | 5.3 | 81.3083 |
| 0.4 | 0.0654 | 1.4 | 1.7671 | 2.4 | 8.1812 | 3.4 | 22.4493 | 4.4 | 47.7127 | 5.4 | 87.1139 |
| 0.5 | 0.1278 | 1.5 | 2.2467 | 2.5 | 9.4708 | 3.5 | 24.9415 | 4.5 | 51.8006 | 5.5 | 93.1875 |
| 0.6 | 0.2208 | 1.6 | 2.8061 | 2.6 | 10.8892 | 3.6 | 27.6117 | 4.6 | 56.1151 | 5.6 | 99.5412 |
| 0.7 | 0.3507 | 1.7 | 3.4514 | 2.7 | 12.4426 | 3.7 | 30.4659 | 4.7 | 60.6629 | 5.7 | 106.1754 |

| Diam. | Solidity. | Diam | Solidity. | Diam. | Solidity. | Dia. | Solidity. | Diam. | Solidity. | Diam. | Solidity. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6.0 | 113.0976 | 7.0 | 179.5948 | 8.0 | 268.0832 | 9.0 | 381.7017 | 10.0 | 523.6000 | 11.0 | 696.9116 |
| 6.1 | 120.3139 | 7.1 | 189.3882 | 8.1 | 280.8469 | 9.1 | 397.8306 | 10.1 | 543.4814 | 11.1 | 720.9409 |
| 6.2 | 127.8320 | 7.2 | 199.5325 | 8.2 | 294.0095 | 9.2 | 414.4048 | 10.2 | 563.8603 | 11.2 | 745.5004 |
| 6.3 | 135.6563 | 7.3 | 210.0331 | 8.3 | 307.5771 | 9.3 | 431.4361 | 10.3 | 584.7415 | 11.3 | 770.6440 |
| 6.4 | 143.7936 | 7.4 | 220.8937 | 8.4 | 321.5553 | 9.4 | 448.9215 | 10.4 | 606.1318 | 11.4 | 796.3301 |
| 6.5 | 152.2499 | 7.5 | 232.1235 | 8.5 | 335.9517 | 9.5 | 466.8763 | 10.5 | 628.0387 | 11.5 | 822.5807 |
| 6.6 | 161.0315 | 7.6 | 243.7276 | 8.6 | 350.7710 | 9.6 | 485.3035 | 10.6 | 650.4666 | 11.6 | 849.4035 |
| 6.7 | 170.1682 | 7.7 | 255.7121 | 8.7 | 366.0199 | 9.7 | 504.2094 | 10.7 | 673.4222 | 11.7 | 876.7999 |
| | | | | | | | | | | 12.0 | 904.7808 |

## TABLE X.

**Showing by inspection the Areas of Spheres from 1 to 12, advancing by 1-10.**

| Diam. | Area. | Diam. | Area | Diam. | Area. | Diam. | Area. | Diam. | Area. | Diam. | Area. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 3.1416 | 3.0 | 28.2744 | 5.0 | 78.5400 | 7.0 | 153.9384 | 9.0 | 254.4696 | 11.0 | 380.1336 |
| 1.1 | 3.8013 | 3.1 | 30.1907 | 5.1 | 81.7130 | 7.1 | 158.3680 | 9.1 | 260.1558 | 11.1 | 387.0765 |
| 1.2 | 4.5239 | 3.2 | 32.1699 | 5.2 | 84.9488 | 7.2 | 162.8605 | 9.2 | 265.9130 | 11.2 | 394.0823 |
| 1.3 | 5.3093 | 3.3 | 34.2120 | 5.3 | 88.2475 | 7.3 | 167.4158 | 9.3 | 271.7169 | 11.3 | 401.1509 |
| 1.4 | 6.1575 | 3.4 | 36.3168 | 5.4 | 91.6090 | 7.4 | 172.0340 | 9.4 | 277.5917 | 11.4 | 408.2823 |
| 1.5 | 7.0686 | 3.5 | 38.4846 | 5.5 | 95.0334 | 7.5 | 176.7150 | 9.5 | 283.5294 | 11.5 | 415.4766 |
| 1.6 | 8.0424 | 3.6 | 40.7151 | 5.6 | 98.5205 | 7.6 | 181.4588 | 9.6 | 289.5298 | 11.6 | 422.7336 |
| 1.7 | 9.0792 | 3.7 | 43.0085 | 5.7 | 102.0705 | 7.7 | 186.2654 | 9.7 | 295.5931 | 11.7 | 430.0536 |
| 1.8 | 10.1787 | 3.8 | 45.3647 | 5.8 | 105.6834 | 7.8 | 191.1349 | 9.8 | 301.7192 | 11.8 | 437.4363 |
| 1.9 | 11.3411 | 3.9 | 47.7837 | 5.9 | 109.3590 | 7.9 | 196.0672 | 9.9 | 307.9082 | 11.9 | 444.8819 |
| 2.0 | 12.5664 | 4.0 | 50.2656 | 6.0 | 113.0976 | 8.0 | 201.0624 | 10.0 | 314.1600 | 12.0 | 452.3904 |
| 2.1 | 13.8544 | 4.1 | 52.8102 | 6.1 | 116.8989 | 8.1 | 206.1203 | 10.1 | 320.4746 | | |
| 2.2 | 15.2053 | 4.2 | 55.4178 | 6.2 | 120.7631 | 8.2 | 211.2411 | 10.2 | 326.8520 | | |
| 2.3 | 16.6190 | 4.3 | 58.0881 | 6.3 | 124.6901 | 8.3 | 216.4248 | 10.3 | 333.2923 | | |
| 2.4 | 18.0956 | 4.4 | 60.8213 | 6.4 | 128.6799 | 8.4 | 221.6712 | 10.4 | 339.7954 | | |
| 2.5 | 19.6350 | 4.5 | 63.6174 | 6.5 | 132.7326 | 8.5 | 226.9806 | 10.5 | 346.3614 | | |
| 2.6 | 21.2372 | 4.6 | 66.4782 | 6.6 | 136.8480 | 8.6 | 232.3527 | 10.6 | 352.9901 | | |
| 2.7 | 22.9022 | 4.7 | 69.3979 | 6.7 | 141.0264 | 8.7 | 237.7877 | 10.7 | 359.6817 | | |
| 2.8 | 24.6300 | 4.8 | 72.3824 | 6.8 | 145.2675 | 8.8 | 243.2855 | 10.8 | 366.4362 | | |
| 2.9 | 26.4208 | 4.9 | 75.4298 | 6.9 | 149.5715 | 8.9 | 248.8461 | 10.9 | 373.2534 | | |

## TABLE XI.

**Showing by inspection the Solidity of Spheres from 1 to 12, advancing by 1-10.**

| Diam. | Solidity. | Diam. | Solidity. | Diam. | Solidity. | Diam. | Solidity | Diam. | Solidity. | Diam. | Solidity. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.0 | 0.5236 | 3.0 | 14.1372 | 5.0 | 65.4500 | 7.0 | 179.5948 | 9.0 | 381.7044 | 11.0 | 696.9116 |
| 1.1 | 0.6969 | 3.1 | 15.5985 | 5.1 | 69.4560 | 7.1 | 187.4021 | 9.1 | 394.5697 | 11.1 | 716.0915 |
| 1.2 | 0.9047 | 3.2 | 17.1573 | 5.2 | 73.6223 | 7.2 | 195.4326 | 9.2 | 407.7210 | 11.2 | 735.6200 |
| 1.3 | 1.1503 | 3.3 | 18.8166 | 5.3 | 77.9519 | 7.3 | 203.6893 | 9.3 | 421.1613 | 11.3 | 755.5008 |
| 1.4 | 1.4367 | 3.4 | 20.5795 | 5.4 | 82.4481 | 7.4 | 212.1752 | 9.4 | 434.8937 | 11.4 | 775.7364 |
| 1.5 | 1.7671 | 3.5 | 22.4493 | 5.5 | 87.1139 | 7.5 | 220.8937 | 9.5 | 448.9215 | 11.5 | 796.3301 |
| 1.6 | 2.1446 | 3.6 | 24.4290 | 5.6 | 91.9525 | 7.6 | 229.8478 | 9.6 | 463.2477 | 11.6 | 817.2851 |
| 1.7 | 2.5724 | 3.7 | 26.5219 | 5.7 | 96.9670 | 7.7 | 239.0511 | 9.7 | 477.7755 | 11.7 | 838.6045 |
| 1.8 | 3.0536 | 3.8 | 28.7309 | 5.8 | 102.1606 | 7.8 | 248.4754 | 9.8 | 492.8081 | 11.8 | 860.2915 |
| 1.9 | 3.5913 | 3.9 | 31.0594 | 5.9 | 107.5364 | 7.9 | 258.1552 | 9.9 | 508.0485 | 11.9 | 882.3492 |
| 2.0 | 4.1888 | 4.0 | 33.5104 | 6.0 | 113.0976 | 8.0 | 268.0832 | 10.0 | 523.6000 | 12.0 | 904.7808 |
| 2.1 | 4.8490 | 4.1 | 36.0870 | 6.1 | 118.8472 | 8.1 | 278.2625 | 10.1 | 539.4656 | | |
| 2.2 | 5.5752 | 4.2 | 38.7924 | 6.2 | 124.7885 | 8.2 | 288.6962 | 10.2 | 555.6485 | | |
| 2.3 | 6.3706 | 4.3 | 41.6298 | 6.3 | 130.9246 | 8.3 | 299.3876 | 10.3 | 572.1518 | | |
| 2.4 | 7.2382 | 4.4 | 44.6023 | 6.4 | 137.2585 | 8.4 | 310.3398 | 10.4 | 588 9784 | | |
| 2.5 | 8.1812 | 4.5 | 47.7130 | 6.5 | 143.7936 | 8.5 | 321.5558 | 10.5 | 606.1324 | | |
| 2.6 | 9.2027 | 4.6 | 50.9651 | 6.6 | 150.5329 | 8.6 | 333.0389 | 10.6 | 623.6159 | | |
| 2.7 | 10.3060 | 4.7 | 54.3617 | 6.7 | 157.4795 | 8.7 | 344.7921 | 10.7 | 641.4325 | | |
| 2.8 | 11.4940 | 4.8 | 57.9059 | 6.8 | 164.6365 | 8.8 | 356.8187 | 10.8 | 659.5852 | | |
| *2.9* | *12.7700* | *4.9* | *61.6010* | 6.9 | 172.0073 | 8.9 | 369.1217 | 10.9 | 678.0771 | | |

## TABLE XII—AREAS OF REGULAR POLYGONS.

| Names of Polygons. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Trigon, - - - | 0,4330 | 0,8660 | 1,2990 | 1,7320 | 2,0650 | 2,5980 | 3,0310 | 3,4640 | 3,8971 |
| Pentagon, - - | 1,7204 | 3,4409 | 5,1614 | 6,8819 | 8,6024 | 10,3229 | 12,0433 | 13,7638 | 15,4843 |
| Hexagon, - - | 2,5981 | 5,1961 | 7,7942 | 10,3923 | 12,9904 | 15,5885 | 18,1865 | 20,7846 | 23,3827 |
| Heptagon, - | 3,6339 | 7,2678 | 10,9017 | 14,5356 | 18,1695 | 21,8034 | 25,4373 | 29,0712 | 32,7051 |
| Octagon, - - | 4,8284 | 9,6569 | 14,4853 | 19,3137 | 24,1421 | 28,9706 | 33,7990 | 38,6274 | 43,4558 |
| Nonagon, - - | 6,1818 | 12,3636 | 18,5454 | 24,7272 | 30,9090 | 37,0908 | 43,2726 | 49,4544 | 55,6362 |
| Decagon, - - | 7,6942 | 15,3884 | 23,0825 | 30,7767 | 38,4709 | 46,1651 | 53,8593 | 61,5534 | 69,2476 |
| Undecagon, - | 9,3656 | 18,7313 | 28,0969 | 37,4626 | 46,8282 | 56,1939 | 65,5595 | 74,9252 | 84,2908 |
| Duodecagon, - | 11,1961 | 22,3923 | 33,5884 | 44,7846 | 55,9807 | 67,1769 | 78,3730 | 89,5692 | 100,7653 |

## TABLE XIII—AREAS OF THE REGULAR SOLIDS.

| Names of Bodies. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Tetrahedron, - | 1,7320 | 3,4641 | 5,1962 | 6,9282 | 8,6603 | 10,3923 | 12,1244 | 13,8564 | 15,5885 |
| Hexahedron, - | 6,0000 | 12,0000 | 18,0000 | 24,0000 | 30,0000 | 36,0000 | 42,0000 | 48,0000 | 54,0000 |
| Octahedron, | 3,4641 | 6,9282 | 10,3923 | 13,8564 | 17,3205 | 20,7846 | 24,2487 | 27,7128 | 31,1769 |
| Duodecahedron, | 20,6457 | 41,2915 | 61,9372 | 82,5830 | 103,2287 | 123,8745 | 144,5202 | 165,1660 | 185,8117 |
| Icosahedron, | 8,6603 | 17,3205 | 25,9808 | 34,6410 | 43,3013 | 51,9615 | 60,6218 | 69,2820 | 77,9423 |

## TABLE XIV—SOLIDITIES OF THE REGULAR SOLIDS.

| Names of Bodies. | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| Tetrahedron, | 0,1178 | 0,2357 | 0,3536 | 0,4714 | 0,5893 | 0,7071 | 0,8250 | 0,9428 | 1,0607 |
| Hexahedron, | 1,0000 | 2,0000 | 3,0000 | 4,0000 | 5,0000 | 6,0000 | 7,0000 | 8,0000 | 9,0000 |
| Octahedron, | 0,4714 | 0,9428 | 1,4142 | 1,8856 | 2,3570 | 2,8284 | 3,2998 | 3,7712 | 4,2426 |
| Duodecahedron, | 7,6631 | 15,3263 | 22,9894 | 30,6525 | 38,3157 | 45,9788 | 53,6420 | 61,3051 | 68,9683 |
| Icosahedron, | 2,1817 | 4,3636 | 6,5454 | 8,7272 | 10,9090 | 13,0908 | 15,2726 | 17,4544 | 19,6362 |

## TABLE XV—AREAS OF THE SEGMENTS OF A CIRCLE

| Height. | Area Seg. | Height | Area Seg. | Height. | Area Seg. | Height. | Area Seg | Height. | Area Seg. | Height. | Area Seg. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .001 | .000042 | .065 | .021659 | .129 | .059327 | .193 | .106261 | .257 | .159636 | .321 | .217509 |
| .002 | .000119 | .066 | .022154 | .130 | .059999 | .194 | .107051 | .258 | .160510 | .322 | .218533 |
| .003 | .000219 | .067 | .022652 | .131 | .060672 | .195 | .107842 | .259 | .161386 | .323 | .219468 |
| .004 | .000337 | .068 | .023154 | .132 | .061348 | .196 | .108636 | .260 | .162263 | .324 | .220404 |
| .005 | .000470 | .069 | .023659 | .133 | .062026 | .197 | .109430 | .261 | .163140 | .325 | .221340 |
| .006 | .000618 | .070 | .024168 | .134 | .062707 | .198 | .110226 | .262 | .164019 | .326 | .222277 |
| .007 | .000779 | .071 | .024680 | .135 | .063389 | .199 | .111024 | .263 | .164899 | .327 | .223215 |
| .008 | .000951 | .072 | .025195 | .136 | 064074 | .200 | .111823 | .264 | .165780 | .328 | .224154 |
| .009 | .001135 | .073 | .025714 | .137 | .064760 | .201 | .112624 | .265 | .166663 | .329 | .225093 |
| .010 | .001329 | .074 | .026236 | .138 | .065449 | .202 | .113426 | .266 | .167546 | .330 | .226033 |
| .011 | .001533 | .075 | .026761 | .139 | .066140 | .203 | .114230 | .267 | .168430 | .331 | .226974 |
| .012 | .001746 | .076 | .027289 | .140 | .066833 | .204 | .115035 | .268 | .169315 | .332 | .227915 |
| .013 | .001968 | .077 | .027821 | .141 | .067528 | .205 | .115842 | .269 | .170202 | .333 | .228858 |
| .014 | .002199 | .078 | .028356 | .142 | .068225 | .206 | .116650 | .270 | .171089 | .334 | .229801 |
| .015 | .002438 | .079 | .028894 | .143 | .068924 | .207 | .117460 | .271 | .171971 | .335 | .230745 |
| .016 | .002682 | .080 | .029435 | .144 | .069625 | .208 | .118271 | .272 | .172867 | .336 | .231689 |
| .017 | .002945 | .081 | .029979 | .145 | .070328 | .209 | .119083 | .273 | .173758 | .337 | .232634 |
| .018 | .003200 | .082 | .030526 | .146 | .071033 | .210 | .119897 | .274 | .174649 | .338 | .233580 |
| .019 | .003471 | .083 | .031076 | .147 | .071741 | .211 | .120712 | .275 | .175542 | .339 | .234526 |
| .020 | .003748 | .084 | .031629 | .148 | .072450 | .212 | .121529 | .276 | .176435 | .340 | .235473 |
| .021 | .004031 | .085 | .032186 | .149 | .073161 | .213 | .122347 | .277 | .177330 | .341 | .236421 |
| .022 | .004322 | .086 | .032745 | .150 | .073874 | .214 | .123167 | .278 | .178225 | .342 | .237369 |
| .023 | .004618 | .087 | .033307 | .151 | .074589 | .215 | .123988 | .279 | .179122 | .343 | .238318 |
| .024 | .004921 | .053 | .033872 | .152 | .075306 | .216 | .124810 | .280 | .180019 | .344 | .239268 |
| .025 | .005230 | .089 | .034441 | .153 | .076026 | .217 | .125634 | .281 | .180918 | .345 | .240218 |
| .026 | .005546 | .090 | .035011 | .154 | .076747 | .218 | .126459 | .282 | .181817 | .346 | .241169 |
| .027 | .005867 | .091 | .035585 | .155 | .077469 | .219 | .127285 | .283 | .182718 | .347 | .242121 |
| .028 | .006194 | .092 | .036162 | .156 | .078194 | .220 | .128113 | .284 | .183619 | .348 | .243074 |
| .029 | .006527 | .093 | .036741 | .157 | .078921 | .221 | .128942 | .285 | .184521 | .349 | .244026 |
| .030 | .006865 | .094 | .037323 | .158 | .079649 | .222 | .129773 | .286 | .185425 | .350 | .244980 |
| .031 | .007209 | .095 | .037909 | .159 | .080380 | .223 | .130605 | .287 | .186329 | .351 | .245934 |
| .032 | .007558 | .096 | .038496 | .160 | .081112 | .224 | .131438 | .288 | .187234 | .352 | .246889 |
| .033 | .007913 | .097 | .039087 | .161 | .081846 | .225 | .132272 | .289 | .188140 | .353 | .247845 |
| .034 | .008273 | .098 | .039680 | .162 | .082582 | .226 | .133108 | .290 | .189047 | .354 | .248801 |
| .035 | .008638 | .099 | .040276 | .163 | .083320 | .227 | .133945 | .291 | .189955 | .355 | .249757 |
| .036 | .009008 | .100 | .040875 | .164 | .084059 | .228 | .134784 | .292 | .190864 | .356 | .250715 |
| .037 | .009383 | .101 | .041476 | .165 | .084801 | .229 | .135624 | .293 | .191775 | .357 | .251673 |
| .038 | .009763 | .102 | .042080 | .166 | .085544 | .230 | .136465 | .294 | .192684 | .358 | .252631 |
| .039 | .010148 | .103 | .042687 | .167 | .086289 | .231 | .137307 | .295 | .193596 | .359 | .253590 |
| .040 | .010537 | .104 | .043296 | .168 | .087036 | .232 | .138150 | .296 | .194509 | .360 | .254550 |
| .041 | .010931 | .105 | .043908 | .169 | .087785 | .233 | .138995 | .297 | .195422 | .361 | .255510 |
| .042 | .011330 | .106 | .044522 | .170 | .088535 | .234 | .139841 | .298 | .196337 | .362 | .256471 |
| .043 | .011734 | .107 | .045139 | .171 | .089287 | .235 | .140688 | .299 | .197252 | .363 | .257433 |
| .044 | .012142 | .108 | .045759 | .172 | .090041 | .236 | .141537 | .300 | .198168 | .364 | .258395 |
| .045 | .012554 | .109 | .046381 | .173 | .090797 | .237 | .142387 | .301 | .199085 | .365 | .259357 |
| .046 | .012971 | .110 | .047005 | .174 | .091554 | .238 | .143238 | .302 | .200003 | .366 | .260320 |
| .047 | .013392 | .111 | .047632 | .175 | .092313 | .239 | .144091 | .303 | .200922 | .367 | .261284 |
| .048 | .013818 | .112 | .048262 | .176 | .093074 | .240 | .144944 | .304 | .201841 | .368 | .262248 |
| .049 | .014247 | .113 | .048894 | .177 | .093836 | .241 | .145799 | .305 | .202761 | .369 | .263213 |
| .050 | .014681 | .114 | .049528 | .178 | .094601 | .242 | .146655 | .306 | .203683 | .370 | .264178 |
| .051 | .015119 | .115 | .050165 | .179 | .095366 | .243 | .147512 | .307 | .204605 | .371 | .265144 |
| .052 | .015561 | .116 | .050804 | .180 | .096134 | .244 | .148371 | .308 | .205527 | .372 | .266111 |
| .053 | .016007 | .117 | .051446 | .181 | .096903 | .245 | .149230 | .309 | .206451 | .373 | .267078 |
| .054 | .016457 | .118 | .052090 | .182 | .097674 | .246 | .150091 | .310 | .207376 | .374 | .268045 |
| .055 | .016911 | .119 | .052736 | .183 | .098447 | .247 | .150953 | .311 | .208301 | .375 | .269013 |
| .056 | .017369 | .120 | .053385 | .184 | .099221 | .248 | .151816 | .312 | .209227 | .376 | .269982 |
| .057 | .017831 | .121 | .054036 | .185 | .099997 | .249 | .152680 | .313 | .210154 | .377 | .270951 |
| .058 | .018296 | .122 | .054689 | .186 | .100774 | .250 | .153546 | .314 | .211082 | .378 | .271920 |
| .059 | .018766 | .123 | .055345 | .187 | .101553 | .251 | .154412 | .315 | .212011 | .379 | .272890 |
| .060 | .019239 | .124 | .056003 | .188 | .102334 | .252 | .155280 | .316 | .212940 | .380 | .273861 |
| .061 | .019716 | .125 | .056663 | .189 | .103116 | .253 | .156149 | .317 | .213871 | .381 | .274832 |
| .062 | .020196 | .126 | .057326 | .190 | .103900 | .254 | .157019 | .318 | .214802 | .382 | .275803 |
| .063 | .020680 | .127 | .057991 | .191 | .104685 | .255 | .157890 | .319 | .215733 | .383 | .276775 |
| .064 | .021168 | .128 | .058658 | .192 | .105472 | .256 | .158762 | .320 | .216666 | .384 | .277748 |

| Height. | Area Seg. | Height. | Area Seg. | Height. | Area Seg. | Height. | Area Seg. | Height. | Area Seg. | Height. | Area Seg. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .385 | .278721 | .405 | .298273 | .425 | .317981 | .445 | .337810 | .465 | .357727 | .485 | .377701 |
| .386 | .279694 | .406 | .299255 | .426 | .318970 | .446 | .338804 | .466 | .358725 | .486 | .378701 |
| .387 | .280668 | .407 | .300238 | .427 | .319959 | .447 | .339798 | .467 | .359723 | .487 | .379700 |
| .388 | .281642 | .408 | .301220 | .428 | .320948 | .448 | .340793 | .468 | .360721 | .488 | .380700 |
| .389 | .282617 | .409 | .302203 | .429 | .321938 | .449 | .341787 | .469 | .361719 | .489 | .381699 |
| .390 | .283592 | .410 | .303187 | .430 | .322928 | .450 | .342782 | .470 | .362717 | .490 | .382699 |
| .391 | .284568 | .411 | .304171 | .431 | .323918 | .451 | .343777 | .471 | .363715 | .491 | .383699 |
| .392 | .285544 | .412 | .305155 | .432 | .324909 | .452 | .344772 | .472 | .364713 | .492 | .384699 |
| .393 | .286521 | .413 | .306140 | .433 | .325900 | .453 | .345768 | .473 | .365712 | .493 | .385699 |
| .394 | .287498 | .414 | .307125 | .434 | .326892 | .454 | .346764 | .474 | .366710 | .494 | .386699 |
| .395 | .288476 | .415 | .308110 | .435 | .327882 | .455 | .347759 | .475 | .367709 | .495 | .387699 |
| .396 | .289453 | .416 | .309095 | .436 | .328874 | .456 | .348755 | .476 | .368708 | .496 | .388699 |
| .397 | .290432 | .417 | .310081 | .437 | .329866 | .457 | .349752 | .477 | .369707 | .497 | .389699 |
| .398 | .291411 | .418 | .311068 | .438 | .330858 | .458 | .350748 | .478 | .370706 | .498 | .390699 |
| .399 | .292390 | .419 | .312054 | .439 | .331850 | .459 | .351745 | .479 | .371704 | .499 | .391699 |
| .400 | .293369 | .420 | .313041 | .440 | .332843 | .460 | .352742 | .480 | .372704 | .500 | .392699 |
| .401 | .294349 | .421 | .314029 | .441 | .333836 | .461 | .353739 | .481 | .373703 | | |
| .402 | .295330 | .422 | .315016 | .442 | .334829 | .462 | .354736 | .482 | .374702 | | |
| .403 | .296311 | .423 | .316004 | .443 | .335822 | .463 | .355732 | .483 | .375702 | | |
| .404 | .297292 | .424 | .316992 | .444 | .336816 | .464 | .356730 | .484 | .376702 | | |

## TABLE XVI.

### AREAS OF THE ZONES OF A CIRCLE.

| Height. | Area | Height. | Area. | Height. | Area. | Height. | Area. | Height. | Area. | Height. | Area. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .001 | .001000 | .038 | .037965 | .075 | .074718 | .112 | .111057 | .149 | .146765 | .186 | .181617 |
| .002 | .002000 | .039 | .038962 | .076 | .075707 | .113 | .112031 | .150 | .147719 | .187 | .182545 |
| .003 | .003000 | .040 | .039958 | .077 | .076695 | .114 | .113005 | .151 | .148673 | .188 | .183472 |
| .004 | .004000 | .041 | .040954 | .078 | .077683 | .115 | .113978 | .152 | .149625 | .189 | .184398 |
| .005 | .005000 | .042 | .041951 | .079 | .078670 | .116 | .114951 | .153 | .150578 | .190 | .185323 |
| .006 | .006000 | .043 | .042947 | .080 | .079658 | .117 | .115924 | .154 | .151530 | .191 | .186248 |
| .007 | .007000 | .044 | .043944 | .081 | .080645 | .118 | .116896 | .155 | .152481 | .192 | .187172 |
| .008 | .008000 | .045 | .044940 | .082 | .081631 | .119 | .117867 | .156 | .153431 | .193 | .188094 |
| .009 | .009000 | .046 | .045935 | .083 | .082618 | .120 | .118838 | .157 | .154381 | .194 | .189016 |
| .010 | .010000 | .047 | .046931 | .084 | .083604 | .121 | .119809 | .158 | .155330 | .195 | .189938 |
| .011 | .011000 | .048 | .047927 | .085 | .084589 | .122 | .120779 | .159 | .156278 | .196 | .190858 |
| .012 | .011999 | .049 | .048922 | .086 | .085574 | .123 | .121748 | .160 | .157226 | .197 | .191777 |
| .013 | .012999 | .050 | .049917 | .087 | .086559 | .124 | .122717 | .161 | .158173 | .198 | .192696 |
| .014 | .013998 | .051 | .050912 | .088 | .087544 | .125 | .123686 | .162 | .159119 | .199 | .193614 |
| .015 | .014998 | .052 | .051906 | .089 | .088528 | .126 | .124654 | .163 | .160065 | .200 | .194531 |
| .016 | .015997 | .053 | .052901 | .090 | .089512 | .127 | .125621 | .164 | .161010 | .201 | .195447 |
| .017 | .016997 | .054 | .053895 | .091 | .090496 | .128 | .126588 | .165 | .161954 | .202 | .196362 |
| .018 | .017996 | .055 | .054890 | .092 | .091479 | .129 | .127555 | .166 | .162898 | .203 | .197277 |
| .019 | .018996 | .056 | .055883 | .093 | .092461 | .130 | .128521 | .167 | .163841 | .204 | .198190 |
| .020 | .019995 | .057 | .056877 | .094 | .093444 | .131 | .129486 | .168 | .164784 | .205 | .199103 |
| .021 | .020994 | .058 | .057870 | .095 | .094426 | .132 | .130451 | .169 | .165725 | .206 | .200015 |
| .022 | .021993 | .059 | .058863 | .096 | .095407 | .133 | .131415 | .170 | .166666 | .207 | .200924 |
| .023 | .022992 | .060 | .059856 | .097 | .096388 | .134 | .132379 | .171 | .167606 | .208 | .201835 |
| .024 | .023991 | .061 | .060849 | .098 | .097369 | .135 | .133342 | .172 | .168549 | .209 | .202744 |
| .025 | .024990 | .062 | .061841 | .099 | .098350 | .136 | .134304 | .173 | .169484 | .210 | .203652 |
| .026 | .025989 | .063 | .062833 | .100 | .099330 | .137 | .135266 | .174 | .170422 | .211 | .204559 |
| .027 | .026987 | .064 | .063825 | .101 | .100309 | .138 | .136228 | .175 | .171359 | .212 | .205465 |
| .028 | .027986 | .065 | .064817 | .102 | .101288 | .139 | .137189 | .176 | .172295 | .213 | .206370 |
| .029 | .028984 | .066 | .065807 | .103 | .102267 | .140 | .138149 | .177 | .173231 | .214 | .207274 |
| .030 | .029982 | .067 | .066799 | .104 | .103246 | .141 | .139109 | .178 | .174166 | .215 | .208178 |
| .031 | .030980 | .068 | .067790 | .105 | .104223 | .142 | .140068 | .179 | .175100 | .216 | .209080 |
| .032 | .031978 | .069 | .068782 | .106 | .105201 | .143 | .141026 | .180 | .176033 | .217 | .209981 |
| .033 | .032976 | .070 | .069771 | .107 | .106178 | .144 | .141984 | .181 | .176966 | .218 | .210882 |
| .034 | .033974 | .071 | .070761 | .108 | .107155 | .145 | .142942 | .182 | .177897 | .219 | .211782 |
| .035 | .034972 | .072 | .071751 | .109 | .108131 | .146 | .143898 | .183 | .178828 | .220 | .212680 |
| .036 | .035969 | .073 | .072740 | .110 | .109107 | .147 | .144854 | .184 | .179759 | .221 | .213577 |
| .037 | .036967 | .074 | .073729 | .111 | .110082 | .148 | .145810 | .185 | .180688 | .222 | .214474 |

| Height. | Area. | Height. | Area. | Height. | Area. | Height. | Area. | Height. | Area. | Height. | Area. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .223 | .215369 | .270 | .256235 | .317 | .294252 | .364 | .328635 | .411 | .358258 | .458 | .3813 |
| .224 | .216264 | .271 | .257075 | .318 | .295025 | .365 | .329310 | .412 | .358827 | .459 | .3817 |
| .225 | .217157 | .272 | .257915 | .319 | .295796 | .366 | .329992 | .413 | .359392 | .460 | .3821 |
| .226 | .218050 | .273 | .258754 | .320 | .296565 | .367 | .330673 | .414 | .359954 | .461 | .3825 |
| .227 | .218941 | .274 | .259591 | .321 | .297333 | .368 | .331351 | .415 | .360513 | .462 | .3829 |
| .228 | .219832 | .275 | .260427 | .322 | .298098 | .369 | .332027 | .416 | .361070 | .463 | .3833 |
| .229 | .220721 | .276 | .261261 | .323 | .298863 | .370 | .332700 | .417 | .361623 | .464 | .3836 |
| .230 | .221610 | .277 | .262094 | .324 | .299625 | .371 | .333372 | .418 | .362173 | .465 | .3840 |
| .231 | .222497 | .278 | .262926 | .325 | .300386 | .372 | .334041 | .419 | .362720 | .466 | .3844 |
| .232 | .223354 | .279 | .263757 | .326 | .301145 | .373 | .334708 | .420 | .363264 | .467 | .3847 |
| .233 | .224269 | .280 | .264586 | .327 | .301902 | .374 | .335373 | .421 | .363805 | .468 | .3851 |
| .234 | .225153 | .281 | .265414 | .328 | .302658 | .375 | .336036 | .422 | .364343 | .469 | .3854 |
| .235 | .226036 | .282 | .266240 | .329 | .303412 | .376 | .336696 | .423 | .364878 | .470 | .3858 |
| .236 | .226919 | .283 | .267065 | .330 | .304164 | .377 | .337354 | .424 | .365410 | .471 | .3861 |
| .237 | .227800 | .284 | .267889 | .331 | .304914 | .378 | .338010 | .425 | .365939 | .472 | .3865 |
| .238 | .228680 | .285 | .268711 | .332 | .305663 | .379 | .338663 | .426 | .366463 | .473 | .3868 |
| .239 | .229559 | .286 | .269532 | .333 | .306410 | .380 | .339314 | .427 | .366985 | .474 | .3871 |
| .240 | .230439 | .287 | .270352 | .334 | .307155 | .381 | .339963 | .428 | .367504 | .475 | .3874 |
| .241 | .231313 | .288 | .271170 | .335 | .307898 | .382 | .340609 | .429 | .368019 | .476 | .3877 |
| .242 | .232189 | .289 | .271987 | .336 | .308640 | .383 | .341253 | .430 | .368531 | .477 | .3880 |
| .243 | .233063 | .290 | .272802 | .337 | .309379 | .384 | .341895 | .431 | .369040 | .478 | .3883 |
| .244 | .233937 | .291 | .273616 | .338 | .310117 | .385 | .342534 | .432 | .369545 | .479 | .3886 |
| .245 | .234809 | .292 | .274428 | .339 | .310853 | .386 | .343171 | .433 | .370047 | .480 | .3889 |
| .246 | .235680 | .293 | .275239 | .340 | .311588 | .387 | .343805 | .434 | .370545 | .481 | .3892 |
| .247 | .236550 | .294 | .276049 | .341 | .312319 | .388 | .344437 | .435 | .371040 | .482 | .3894 |
| .248 | .237419 | .295 | .276857 | .342 | .313050 | .389 | .345067 | .436 | .371531 | .483 | .3897 |
| .249 | .238287 | .296 | .277664 | .343 | .313778 | .390 | .345694 | .437 | .372019 | .484 | .3900 |
| .250 | .239153 | .297 | .278469 | .344 | .314505 | .391 | .346318 | .438 | .372503 | .485 | .3902 |
| .251 | .240019 | .298 | .279273 | .345 | .315230 | .392 | .346940 | .439 | .372983 | .486 | .3905 |
| .252 | .240883 | .299 | .280075 | .346 | .315952 | .393 | .347560 | .440 | .373460 | .487 | .3907 |
| .253 | .241746 | .300 | .280876 | .347 | .316673 | .394 | .348177 | .441 | .373933 | .488 | .3909 |
| .254 | .242608 | .301 | .281675 | .348 | .317393 | .395 | .348791 | .442 | .374403 | .489 | .3911 |
| .255 | .243469 | .302 | .282473 | .349 | .318110 | .396 | .349403 | .443 | .374868 | .490 | .3913 |
| .256 | .244328 | .303 | .283269 | .350 | .318825 | .397 | .350012 | .444 | .375330 | .491 | .3915 |
| .257 | .245187 | .304 | .284063 | .351 | .319538 | .398 | .350619 | .445 | .375788 | .492 | .3917 |
| .258 | .246044 | .305 | .284857 | .352 | .320249 | .399 | .351223 | .446 | .376242 | .493 | .3919 |
| .259 | .246900 | .306 | .285648 | .353 | .320958 | .400 | .351824 | .447 | .376692 | .494 | .3920 |
| .260 | .247755 | .307 | .286438 | .354 | .321666 | .401 | .352423 | .448 | .377138 | .495 | .3922 |
| .261 | .248608 | .308 | .287227 | .355 | .322371 | .402 | .353019 | .449 | .377580 | .496 | .3923 |
| .262 | .249461 | .309 | .288014 | .356 | .323075 | .403 | .353612 | .450 | .378018 | .497 | .3924 |
| .263 | .250312 | .310 | .288799 | .357 | .323775 | .404 | .354202 | .451 | .378452 | .498 | .3925 |
| .264 | .251162 | .311 | .289583 | .358 | .324474 | .405 | .354790 | .452 | .378881 | .499 | .3926 |
| .265 | .252011 | .312 | .290365 | .359 | .325171 | .406 | .355376 | .453 | .379307 | .500 | .3926 |
| .266 | .252851 | .313 | .291146 | .360 | .325866 | .407 | .355958 | .454 | .379728 | | |
| .267 | .253704 | .314 | .291925 | .361 | .326559 | .408 | .356537 | .455 | .380145 | | |
| .268 | .254549 | .315 | .292702 | .362 | .327250 | .409 | .357114 | .456 | .380557 | | |
| .269 | .255392 | .316 | .293478 | .363 | .327939 | .410 | .357688 | .457 | .380965 | | |

## TABLE XVII.

### LENGTHS OF CIRCULAR ARCS.

| Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .100 | 1.02645 | .107 | 1.03026 | .114 | 1.03430 | .121 | 1.03860 | .128 | 1.04313 | .135 | 1.0479 |
| .101 | 1.02698 | .108 | 1.03082 | .115 | 1.03490 | .122 | 1.03923 | .129 | 1.04380 | .136 | 1.0486 |
| .102 | 1.02752 | .109 | 1.03139 | .116 | 1.03551 | .123 | 1.03987 | .130 | 1.04447 | .137 | 1.0493 |
| .103 | 1.02806 | .110 | 1.03196 | .117 | 1.03611 | .124 | 1.04051 | .131 | 1.04515 | .138 | 1.0500 |
| .104 | 1.02860 | .111 | 1.03254 | .118 | 1.03672 | .125 | 1.04116 | .132 | 1.04584 | .139 | 1.0507 |
| .105 | 1.02914 | .112 | 1.03312 | .119 | 1.03734 | .126 | 1.04181 | .133 | 1.04652 | .140 | 1.0514 |
| .106 | 1.02970 | .113 | 1.03371 | .120 | 1.03797 | .127 | 1.04247 | .134 | 1.04722 | .141 | 1.0522 |

| Height. | Length. | Height. | Length. | Height. | Length. | Height | Length. | Height | Length. | Height | Length. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .142 | 1.05293 | .202 | 1.10548 | .262 | 1.17401 | .322 | 1.25686 | .382 | 1.35237 | .442 | 1.45883 |
| .143 | 1.05367 | .203 | 1.10650 | .263 | 1.17527 | .323 | 1.25836 | .383 | 1.35406 | .443 | 1.46069 |
| .144 | 1.05441 | .204 | 1.10752 | .264 | 1.17655 | .324 | 1.25987 | .384 | 1.35575 | .444 | 1.46256 |
| .145 | 1.05516 | .205 | 1.10855 | .265 | 1.17784 | .325 | 1.26137 | .385 | 1.35744 | .445 | 1.46441 |
| .146 | 1.05591 | .206 | 1.10958 | .266 | 1.17912 | .326 | 1.26286 | .386 | 1.35914 | .446 | 1.46628 |
| .147 | 1.05667 | .207 | 1.11062 | .267 | 1.18040 | .327 | 1.26437 | .387 | 1.36084 | .447 | 1.46815 |
| .148 | 1.05743 | .208 | 1.11165 | .268 | 1.18162 | .328 | 1.26588 | .388 | 1.36254 | .448 | 1.47002 |
| .149 | 1.05819 | .209 | 1.11269 | .269 | 1.18294 | .329 | 1.26740 | .389 | 1.36425 | .449 | 1.47189 |
| .150 | 1.05896 | .210 | 1.11374 | .270 | 1.18428 | .330 | 1.26892 | .390 | 1.36596 | .450 | 1.47377 |
| .151 | 1.05973 | .211 | 1.11479 | .271 | 1.18557 | .331 | 1.27044 | .391 | 1.36767 | .451 | 1.47565 |
| .152 | 1.06051 | .212 | 1.11584 | .272 | 1.18688 | .332 | 1.27196 | .392 | 1.36939 | .452 | 1.47753 |
| .153 | 1.06130 | .213 | 1.11692 | .273 | 1.18819 | .333 | 1.27349 | .393 | 1.37111 | .453 | 1.47942 |
| .154 | 1.06209 | .214 | 1.11796 | .274 | 1.18969 | .334 | 1.27502 | .394 | 1.37283 | .454 | 1.48131 |
| .155 | 1.06288 | .215 | 1.11904 | .275 | 1.19082 | .335 | 1.27656 | .395 | 1.37455 | .455 | 1.48320 |
| .156 | 1.06368 | .216 | 1.12011 | .276 | 1.19214 | .336 | 1.27810 | .396 | 1.37628 | .456 | 1.48509 |
| .157 | 1.06449 | .217 | 1.12118 | .277 | 1.19345 | .337 | 1.27964 | .397 | 1.37801 | .457 | 1.48699 |
| .158 | 1.06530 | .218 | 1.12225 | .278 | 1.19477 | .338 | 1.28118 | .398 | 1.37974 | .458 | 1.48889 |
| .159 | 1.06611 | .219 | 1.12334 | .279 | 1.19610 | .339 | 1.28273 | .399 | 1.38148 | .459 | 1.49079 |
| .160 | 1.06693 | .220 | 1.12445 | .280 | 1.19743 | .340 | 1.28428 | .400 | 1.38322 | .460 | 1.49269 |
| .161 | 1.06775 | .221 | 1.12556 | .281 | 1.19887 | .341 | 1.28583 | .401 | 1.38496 | .461 | 1.49460 |
| .162 | 1.06858 | .222 | 1.12663 | .282 | 1.20011 | .342 | 1.28739 | .402 | 1.38671 | .462 | 1.49651 |
| .163 | 1.06941 | .223 | 1.12774 | .283 | 1.20146 | .343 | 1.28895 | .403 | 1.38846 | .463 | 1.49842 |
| .164 | 1.07025 | .224 | 1.12885 | .284 | 1.20282 | .344 | 1.29052 | .404 | 1.39021 | .464 | 1.50033 |
| .165 | 1.07109 | .225 | 1.12997 | .285 | 1.20419 | .345 | 1.29209 | .405 | 1.39196 | .465 | 1.50224 |
| .166 | 1.07194 | .226 | 1.13108 | .286 | 1.20558 | .346 | 1.29366 | .406 | 1.39372 | .466 | 1.50416 |
| .167 | 1.07279 | .227 | 1.13219 | .287 | 1.20696 | .347 | 1.29523 | .407 | 1.39548 | .467 | 1.50608 |
| .168 | 1.07365 | .228 | 1.13331 | .288 | 1.20828 | .348 | 1.29681 | .408 | 1.39724 | .468 | 1.50800 |
| .169 | 1.07451 | .229 | 1.13444 | .289 | 1.20967 | .349 | 1.29839 | .409 | 1.39900 | .469 | 1.50992 |
| .170 | 1.07537 | .230 | 1.13557 | .290 | 1.21102 | .350 | 1.29997 | .410 | 1.40077 | .470 | 1.51185 |
| .171 | 1.07624 | .231 | 1.13671 | .291 | 1.21239 | .351 | 1.30156 | .411 | 1.40254 | .471 | 1.51378 |
| .172 | 1.07711 | .232 | 1.13786 | .292 | 1.21381 | .352 | 1.30315 | .412 | 1.40432 | .472 | 1.51571 |
| .173 | 1.07799 | .233 | 1.13903 | .293 | 1.21520 | .353 | 1.30474 | .413 | 1.40610 | .473 | 1.51764 |
| .174 | 1.07888 | .234 | 1.14020 | .294 | 1.21658 | .354 | 1.30634 | .414 | 1.40788 | .474 | 1.51958 |
| .175 | 1.07977 | .235 | 1.14136 | .295 | 1.21794 | .355 | 1.30794 | .415 | 1.40966 | .475 | 1.52152 |
| .176 | 1.08066 | .236 | 1.14247 | .296 | 1.21926 | .356 | 1.30954 | .416 | 1.41145 | .476 | 1.52346 |
| .177 | 1.08156 | .237 | 1.14363 | .297 | 1.22061 | .357 | 1.31115 | .417 | 1.41324 | .477 | 1.52541 |
| .178 | 1.08246 | .238 | 1.14480 | .298 | 1.22203 | .358 | 1.31276 | .418 | 1.41503 | .478 | 1.52736 |
| .179 | 1.08337 | .239 | 1.14597 | .299 | 1.22347 | .359 | 1.31437 | .419 | 1.41682 | .479 | 1.52931 |
| .180 | 1.08428 | .240 | 1.14714 | .300 | 1.22495 | .360 | 1.31599 | .420 | 1.41861 | .480 | 1.53126 |
| .181 | 1.08519 | .241 | 1.14831 | .301 | 1.22635 | .361 | 1.31761 | .421 | 1.42041 | .481 | 1.53322 |
| .182 | 1.08611 | .242 | 1.14949 | .302 | 1.22776 | .362 | 1.31923 | .422 | 1.42222 | .482 | 1.53518 |
| .183 | 1.08704 | .243 | 1.15067 | .303 | 1.22918 | .363 | 1.32086 | .423 | 1.42402 | .483 | 1.53714 |
| .184 | 1.08797 | .244 | 1.15186 | .304 | 1.23061 | .364 | 1.32249 | .424 | 1.42583 | .484 | 1.53910 |
| .185 | 1.08890 | .245 | 1.15308 | .305 | 1.23205 | .365 | 1.32413 | .425 | 1.42764 | .485 | 1.54106 |
| .186 | 1.08984 | .246 | 1.15429 | .306 | 1.23349 | .366 | 1.32577 | .426 | 1.42945 | .486 | 1.54302 |
| .187 | 1.09079 | .247 | 1.15549 | .307 | 1.23491 | .367 | 1.32741 | .427 | 1.43127 | .487 | 1.54499 |
| .188 | 1.09174 | .248 | 1.15670 | .308 | 1.23636 | .368 | 1.32905 | .428 | 1.43309 | .488 | 1.54696 |
| .189 | 1.09269 | .249 | 1.15791 | .309 | 1.23780 | .369 | 1.33069 | .429 | 1.43491 | .489 | 1.54893 |
| .190 | 1.09365 | .250 | 1.15912 | .310 | 1.23925 | .370 | 1.33234 | .430 | 1.43673 | .490 | 1.55090 |
| .191 | 1.09461 | .251 | 1.16033 | .311 | 1.24070 | .371 | 1.33399 | .431 | 1.43856 | .491 | 1.55288 |
| .192 | 1.09557 | .252 | 1.16157 | .312 | 1.24216 | .372 | 1.33564 | .432 | 1.44039 | .492 | 1.55486 |
| .193 | 1.09654 | .253 | 1.16279 | .313 | 1.24360 | .373 | 1.33730 | .433 | 1.44222 | .493 | 1.55685 |
| .194 | 1.09752 | .254 | 1.16402 | .314 | 1.24506 | .374 | 1.33896 | .434 | 1.44405 | .494 | 1.55854 |
| .195 | 1.09850 | .255 | 1.16526 | .315 | 1.24654 | .375 | 1.34063 | .435 | 1.44589 | .495 | 1.56083 |
| .196 | 1.09949 | .256 | 1.16649 | .316 | 1.24801 | .376 | 1.34229 | .436 | 1.44773 | .496 | 1.56282 |
| .197 | 1.10048 | .257 | 1.16774 | .317 | 1.24946 | .377 | 1.34396 | .437 | 1.44957 | .497 | 1.56481 |
| .198 | 1.10147 | .258 | 1.16899 | .318 | 1.25095 | .378 | 1.34563 | .438 | 1.45142 | .498 | 1.56680 |
| .199 | 1.10247 | .259 | 1.17024 | .319 | 1.25243 | .379 | 1.34731 | .439 | 1.45327 | .499 | 1.56879 |
| .200 | 1.10348 | .260 | 1.17150 | .320 | 1.25391 | .380 | 1.34899 | .440 | 1.45512 | .500 | 1.57079 |
| .201 | 1.10447 | .261 | 1.17275 | .321 | 1.25539 | .381 | 1.35068 | .441 | 1.45697 | | |

## TABLE XVIII—LENGTHS OF SEMI-ELLIPTIC ARCS.

| Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .100 | 1.04162 | .163 | 1.10784 | .226 | 1.18143 | .289 | 1.26202 | .352 | 1.34823 | .415 | 1.44016 |
| .101 | 1.04262 | .164 | 1.10896 | .227 | 1.18266 | .290 | 1.26335 | .353 | 1.34965 | .416 | 1.44165 |
| .102 | 1.04362 | .165 | 1.11008 | .228 | 1.18390 | .291 | 1.26468 | .354 | 1.35108 | .417 | 1.44314 |
| .103 | 1.04462 | .166 | 1.11120 | .229 | 1.18514 | .292 | 1.26601 | .355 | 1.35251 | .418 | 1.44463 |
| .104 | 1.04562 | .167 | 1.11232 | .230 | 1.18638 | .293 | 1.26734 | .356 | 1.35394 | .419 | 1.44613 |
| .105 | 1.04662 | .168 | 1.11344 | .231 | 1.18762 | .294 | 1.26867 | .357 | 1.35537 | .420 | 1.44763 |
| .106 | 1.04762 | .169 | 1.11456 | .232 | 1.18885 | .295 | 1.27000 | .358 | 1.35680 | .421 | 1.44913 |
| .107 | 1.04862 | .170 | 1.11569 | .233 | 1.19010 | .296 | 1.27133 | .359 | 1.35823 | .422 | 1.45064 |
| .108 | 1.04962 | .171 | 1.11682 | .234 | 1.19134 | .297 | 1.27267 | .360 | 1.35967 | .423 | 1.45214 |
| .109 | 1.05063 | .172 | 1.11795 | .235 | 1.19258 | .298 | 1.27401 | .361 | 1.36111 | .424 | 1.45364 |
| .110 | 1.05164 | .173 | 1.11908 | .236 | 1.19382 | .299 | 1.27535 | .362 | 1.36255 | .425 | 1.45515 |
| .111 | 1.05265 | .174 | 1.12021 | .237 | 1.19506 | .300 | 1.27669 | .363 | 1.36399 | .426 | 1.45665 |
| .112 | 1.05366 | .175 | 1.12134 | .238 | 1.19630 | .301 | 1.27803 | .364 | 1.36543 | .427 | 1.45815 |
| .113 | 1.05467 | .176 | 1.12247 | .239 | 1.19755 | .302 | 1.27937 | .365 | 1.36688 | .428 | 1.45966 |
| .114 | 1.05568 | .177 | 1.12360 | .240 | 1.19880 | .303 | 1.28071 | .366 | 1.36833 | .429 | 1.46167 |
| .115 | 1.05669 | .178 | 1.12473 | .241 | 1.20005 | .304 | 1.28205 | .367 | 1.36978 | .430 | 1.46268 |
| .116 | 1.05770 | .179 | 1.12586 | .242 | 1.20130 | .305 | 1.28339 | .368 | 1.37123 | .431 | 1.46419 |
| .117 | 1.05872 | .180 | 1.12699 | .243 | 1.20255 | .306 | 1.28474 | .369 | 1.37268 | .432 | 1.46570 |
| .118 | 1.05974 | .181 | 1.12813 | .244 | 1.20380 | .307 | 1.28609 | .370 | 1.37414 | .433 | 1.46721 |
| .119 | 1.06076 | .182 | 1.12927 | .245 | 1.20506 | .308 | 1.28744 | .371 | 1.37562 | .434 | 1.46872 |
| .120 | 1.06178 | .183 | 1.13041 | .246 | 1.20632 | .309 | 1.28879 | .372 | 1.37708 | .435 | 1.47023 |
| .121 | 1.06280 | .184 | 1.13155 | .247 | 1.20758 | .310 | 1.29014 | .373 | 1.37854 | .436 | 1.47174 |
| .122 | 1.06382 | .185 | 1.13269 | .248 | 1.20884 | .311 | 1.29149 | .374 | 1.38000 | .437 | 1.47326 |
| .123 | 1.06484 | .186 | 1.13383 | .249 | 1.21010 | .312 | 1.29285 | .375 | 1.38146 | .438 | 1.47478 |
| .124 | 1.06586 | .187 | 1.13497 | .250 | 1.21136 | .313 | 1.29421 | .376 | 1.38292 | .439 | 1.47630 |
| .125 | 1.06689 | .188 | 1.13611 | .251 | 1.21263 | .314 | 1.29557 | .377 | 1.38439 | .440 | 1.47782 |
| .126 | 1.06792 | .189 | 1.13726 | .252 | 1.21390 | .315 | 1.29693 | .378 | 1.38585 | .441 | 1.47934 |
| .127 | 1.06895 | .190 | 1.13841 | .253 | 1.21517 | .316 | 1.29829 | .379 | 1.38732 | .442 | 1.48086 |
| .128 | 1.06998 | .191 | 1.13956 | .254 | 1.21644 | .317 | 1.29965 | .380 | 1.38879 | .443 | 1.48238 |
| .129 | 1.07101 | .192 | 1.14071 | .255 | 1.21772 | .318 | 1.30102 | .381 | 1.39024 | .444 | 1.48391 |
| .130 | 1.07204 | .193 | 1.14186 | .256 | 1.21900 | .319 | 1.30239 | .382 | 1.39169 | .445 | 1.48544 |
| .131 | 1.07308 | .194 | 1.14301 | .257 | 1.22028 | .320 | 1.30376 | .383 | 1.39314 | .446 | 1.48697 |
| .132 | 1.07412 | .195 | 1.14416 | .258 | 1.22156 | .321 | 1.30513 | .384 | 1.39459 | .447 | 1.48850 |
| .133 | 1.07516 | .196 | 1.14531 | .259 | 1.22284 | .322 | 1.30650 | .385 | 1.39605 | .448 | 1.49003 |
| .134 | 1.07621 | .197 | 1.14646 | .260 | 1.22412 | .323 | 1.30787 | .386 | 1.39751 | .449 | 1.49157 |
| .135 | 1.07726 | .198 | 1.14762 | .261 | 1.22541 | .324 | 1.30924 | .387 | 1.39897 | .450 | 1.49311 |
| .136 | 1.07831 | .199 | 1.14888 | .262 | 1.22670 | .325 | 1.31061 | .388 | 1.40043 | .451 | 1.49465 |
| .137 | 1.07937 | .200 | 1.15014 | .263 | 1.22799 | .326 | 1.31198 | .389 | 1.40189 | .452 | 1.49618 |
| .138 | 1.08043 | .201 | 1.15131 | .264 | 1.22928 | .327 | 1.31335 | .390 | 1.40335 | .453 | 1.49771 |
| .139 | 1.08149 | .202 | 1.15248 | .265 | 1.23057 | .328 | 1.31472 | .391 | 1.40481 | .454 | 1.49924 |
| .140 | 1.08255 | .203 | 1.15366 | .266 | 1.23186 | .329 | 1.31610 | .392 | 1.40627 | .455 | 1.50077 |
| .141 | 1.08362 | .204 | 1.15484 | .267 | 1.23315 | .330 | 1.31748 | .393 | 1.40773 | .456 | 1.50230 |
| .142 | 1.08469 | .205 | 1.15602 | .268 | 1.23445 | .331 | 1.31886 | .394 | 1.40919 | .457 | 1.50383 |
| .143 | 1.08576 | .206 | 1.15720 | .269 | 1.23575 | .332 | 1.32024 | .395 | 1.41065 | .458 | 1.50536 |
| .144 | 1.08684 | .207 | 1.15838 | .270 | 1.23705 | .333 | 1.32162 | .396 | 1.41211 | .459 | 1.50689 |
| .145 | 1.08792 | .208 | 1.15957 | .271 | 1.23835 | .334 | 1.32300 | .397 | 1.41357 | .460 | 1.50842 |
| .146 | 1.08901 | .209 | 1.16076 | .272 | 1.23966 | .335 | 1.32438 | .398 | 1.41504 | .461 | 1.50996 |
| .147 | 1.09010 | .210 | 1.16196 | .273 | 1.24097 | .336 | 1.32576 | .399 | 1.41651 | .462 | 1.51150 |
| .148 | 1.09119 | .211 | 1.16316 | .274 | 1.24228 | .337 | 1.32715 | .400 | 1.41798 | .463 | 1.51304 |
| .149 | 1.09228 | .212 | 1.16436 | .275 | 1.24359 | .338 | 1.32854 | .401 | 1.41945 | .464 | 1.51458 |
| .150 | 1.09330 | .213 | 1.16557 | .276 | 1.24480 | .339 | 1.32993 | .402 | 1.42092 | .465 | 1.51612 |
| .151 | 1.09448 | .214 | 1.16678 | .277 | 1.24612 | .340 | 1.33132 | .403 | 1.42239 | .466 | 1.51766 |
| .152 | 1.09558 | .215 | 1.16799 | .278 | 1.24744 | .341 | 1.33272 | .404 | 1.42386 | .467 | 1.51920 |
| .153 | 1.09669 | .216 | 1.16920 | .279 | 1.24876 | .342 | 1.33412 | .405 | 1.42533 | .468 | 1.52074 |
| .154 | 1.09780 | .217 | 1.17041 | .280 | 1.25010 | .343 | 1.33552 | .406 | 1.42681 | .469 | 1.52229 |
| .155 | 1.09891 | .218 | 1.17163 | .281 | 1.25142 | .344 | 1.33692 | .407 | 1.42829 | .470 | 1.52384 |
| .156 | 1.10002 | .219 | 1.17285 | .282 | 1.25274 | .345 | 1.33833 | .408 | 1.42977 | .471 | 1.52539 |
| .157 | 1.10113 | .220 | 1.17407 | .283 | 1.25406 | .346 | 1.33974 | .409 | 1.43125 | .472 | 1.52691 |
| .158 | 1.10224 | .221 | 1.17529 | .284 | 1.25538 | .347 | 1.34115 | .410 | 1.43273 | .473 | 1.52849 |
| .159 | 1.10335 | .222 | 1.17651 | .285 | 1.25670 | .348 | 1.34256 | .411 | 1.43421 | .474 | 1.53004 |
| .160 | 1.10447 | .223 | 1.17774 | .286 | 1.25803 | .349 | 1.34397 | .412 | 1.43569 | .475 | 1.53159 |
| *.161* | *1.10560* | .224 | 1.17897 | .287 | 1.25936 | .350 | 1.34539 | .413 | 1.43718 | .476 | 1.53314 |
| *.162* | *1.10672* | *.225* | *1.18020* | .288 | 1.26069 | .351 | 1.34681 | .414 | 1.43867 | .477 | 1.53469 |

| Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .478 | 1.53625 | .543 | 1.63780 | .608 | 1.74121 | .673 | 1.84720 | .738 | 1.95566 | .803 | 2.06727 |
| .479 | 1.53781 | .544 | 1.63937 | .609 | 1.74283 | .674 | 1.84885 | .739 | 1.95735 | .804 | 2.06901 |
| .480 | 1.53937 | .545 | 1.64094 | .610 | 1.74444 | .675 | 1.85050 | .740 | 1.95994 | .805 | 2.07076 |
| .481 | 1.54093 | .546 | 1.64251 | .611 | 1.74605 | .676 | 1.85215 | .741 | 1.96074 | .806 | 2.07251 |
| .482 | 1.54249 | .547 | 1.64408 | .612 | 1.74767 | .677 | 1.85379 | .742 | 1.96244 | .807 | 2.07427 |
| .483 | 1.54405 | .548 | 1.64565 | .613 | 1.74929 | .678 | 1.85544 | .743 | 1.96414 | .808 | 2.07602 |
| .484 | 1.54561 | .549 | 1.64722 | .614 | 1.75091 | .679 | 1.85709 | .744 | 1.96583 | .809 | 2.07777 |
| .485 | 1.54718 | .550 | 1.64879 | .615 | 1.75252 | .680 | 1.85874 | .745 | 1.96753 | .810 | 2.07953 |
| .486 | 1.54875 | .551 | 1.65036 | .616 | 1.75414 | .681 | 1.86039 | .746 | 1.96923 | .811 | 2.08128 |
| .487 | 1.55032 | .552 | 1.65193 | .617 | 1.75576 | .682 | 1.86205 | .747 | 1.97093 | .812 | 2.08304 |
| .488 | 1.55189 | .553 | 1.65350 | .618 | 1.75738 | .683 | 1.86370 | .748 | 1.97262 | .813 | 2.08480 |
| .489 | 1.55346 | .554 | 1.65507 | .619 | 1.75900 | .684 | 1.86535 | .749 | 1.97432 | .814 | 2.08656 |
| .490 | 1.55503 | .555 | 1.65665 | .620 | 1.76062 | .685 | 1.86700 | .750 | 1.97602 | .815 | 2.08832 |
| .491 | 1.55660 | .556 | 1.65823 | .621 | 1.76224 | .686 | 1.86866 | .751 | 1.97772 | .816 | 2.09008 |
| .492 | 1.55817 | .557 | 1.65981 | .622 | 1.76386 | .687 | 1.87031 | .752 | 1.97943 | .817 | 2.09184 |
| .493 | 1.55974 | .558 | 1.66139 | .623 | 1.76548 | .688 | 1.87196 | .753 | 1.98113 | .818 | 2.09360 |
| .494 | 1.56131 | .559 | 1.66297 | .624 | 1.76710 | .689 | 1.87362 | .754 | 1.98283 | .819 | 2.09536 |
| .495 | 1.56289 | .560 | 1.66455 | .625 | 1.76872 | .690 | 1.87527 | .755 | 1.98453 | .820 | 2.09712 |
| .496 | 1.56447 | .561 | 1.66613 | .626 | 1.77034 | .691 | 1.87693 | .756 | 1.98623 | .821 | 2.09888 |
| .497 | 1.56605 | .562 | 1.66771 | .627 | 1.77197 | .692 | 1.87859 | .757 | 1.98794 | .822 | 2.10065 |
| .498 | 1.56763 | .563 | 1.66929 | .628 | 1.77359 | .693 | 1.88024 | .758 | 1.98964 | .823 | 2.10242 |
| .499 | 1.56921 | .564 | 1.67087 | .629 | 1.77521 | 694 | 1.88190 | .759 | 1.99134 | .824 | 2.10419 |
| .500 | 1.57089 | .565 | 1.67245 | .630 | 1.77684 | .695 | 1.88356 | .760 | 1.99305 | .825 | 2.10596 |
| .501 | 1.57234 | .566 | 1.67403 | .631 | 1.77847 | .696 | 1.88522 | .761 | 1.99476 | .826 | 2.10773 |
| .502 | 1.57389 | .567 | 1.67561 | .632 | 1.78009 | .697 | 1.88688 | .762 | 1.99647 | .827 | 2.10950 |
| .503 | 1.57544 | .568 | 1.67719 | .633 | 1.78172 | .698 | 1.88854 | .763 | 1.99818 | .828 | 2.11127 |
| .504 | 1.57699 | .569 | 1.67877 | .634 | 1.78335 | .699 | 1.89020 | .764 | 1.99989 | .829 | 2.11304 |
| .505 | 1.57854 | .570 | 1.68036 | .635 | 1.78498 | .700 | 1.89186 | .765 | 2.00160 | .830 | 2.11481 |
| .506 | 1.58009 | .571 | 1.68195 | .636 | 1.78660 | .701 | 1.89352 | .766 | 2.00331 | .831 | 2.11659 |
| .507 | 1.58164 | .572 | 1.68354 | .637 | 1.78823 | .702 | 1.89519 | .767 | 2.00502 | .832 | 2.11837 |
| .508 | 1.58319 | .573 | 1.68513 | .638 | 1.78986 | .703 | 1.89685 | .768 | 2.00673 | .833 | 2.12015 |
| .509 | 1.58474 | .574 | 1.68672 | .639 | 1.79149 | .704 | 1.89851 | .769 | 2.00844 | .834 | 2.12193 |
| .510 | 1.58629 | .575 | 1.68831 | .640 | 1.79312 | .705 | 1.90017 | .770 | 2.01016 | .835 | 2.12371 |
| .511 | 1.58784 | .576 | 1.68990 | .641 | 1.79475 | .706 | 1.90184 | .771 | 2.01187 | .836 | 2.12549 |
| .512 | 1.58940 | .577 | 1.69149 | .642 | 1.79638 | .707 | 1.90350 | .772 | 2.01359 | .837 | 2.12727 |
| .513 | 1.59096 | .578 | 1.69308 | .643 | 1.79801 | .708 | 1.90517 | .773 | 2.01531 | .838 | 2.12905 |
| .514 | 1.59252 | .579 | 1.69467 | .644 | 1.79964 | .709 | 1.90684 | .774 | 2.01702 | .839 | 2.13083 |
| .515 | 1.59408 | .580 | 1.69626 | .645 | 1.80127 | .710 | 1.90852 | .775 | 2.01874 | .840 | 2.13261 |
| .516 | 1.59564 | .581 | 1.69785 | .646 | 1.80290 | .711 | 1.91019 | .776 | 2.02045 | .841 | 2.13439 |
| .517 | 1.59720 | .582 | 1.69945 | .647 | 1.80454 | .712 | 1.91187 | .777 | 2.02217 | .842 | 2.13618 |
| .518 | 1.59876 | .583 | 1.70105 | .648 | 1.80617 | .713 | 1.91355 | .778 | 2.02389 | .843 | 2.13797 |
| .519 | 1.60032 | .584 | 1.70264 | .649 | 1.80780 | .714 | 1.91523 | .779 | 2.02561 | .844 | 2.13976 |
| .520 | 1.60188 | .585 | 1.70424 | .650 | 1.80943 | .715 | 1.91691 | .780 | 2.02733 | .845 | 2.14155 |
| .521 | 1.60344 | .586 | 1.70584 | .651 | 1.81107 | .716 | 1.91859 | .781 | 2.02907 | .846 | 2.14334 |
| .522 | 1.60500 | .587 | 1.70745 | .652 | 1.81271 | .717 | 1.92027 | .782 | 2.03080 | .847 | 2.14513 |
| .523 | 1.60656 | .588 | 1.70905 | .653 | 1.81435 | .718 | 1.92195 | .783 | 2.03252 | .848 | 2.14692 |
| .524 | 1.60812 | .589 | 1.71065 | .654 | 1.81599 | .719 | 1.92363 | .784 | 2.03425 | .849 | 2.14871 |
| .525 | 1.60968 | .590 | 1.71225 | .655 | 1.81763 | .720 | 1.92531 | .785 | 2.03598 | .850 | 2.15050 |
| .526 | 1.61124 | .591 | 1.71386 | .656 | 1.81928 | .721 | 1.92700 | .786 | 2.03771 | .851 | 2.15229 |
| .527 | 1.61280 | .592 | 1.71546 | .657 | 1.82091 | .722 | 1.92868 | .787 | 2.03944 | .852 | 2.15409 |
| .528 | 1.61436 | .593 | 1.71707 | .658 | 1.82255 | .723 | 1.93036 | .788 | 2.04117 | .853 | 2.15589 |
| .529 | 1.61592 | .594 | 1.71868 | .659 | 1.82419 | .724 | 1.93204 | .789 | 2.04290 | .854 | 2.15770 |
| .530 | 1.61748 | .595 | 1.72029 | .660 | 1.82583 | .725 | 1.93373 | .790 | 2.04462 | .855 | 2.15950 |
| .531 | 1.61904 | .596 | 1.72190 | .661 | 1.82747 | .726 | 1.93541 | .791 | 2.04635 | .856 | 2.16130 |
| .532 | 1.62060 | .597 | 1.72350 | .662 | 1.82911 | .727 | 1.93710 | .792 | 2.04809 | .857 | 2.16309 |
| .533 | 1.62216 | .598 | 1.72511 | .663 | 1.83075 | .728 | 1.93878 | .793 | 2.04983 | .858 | 2.16489 |
| .534 | 1.62372 | .599 | 1.72672 | .664 | 1.83240 | .729 | 1.94046 | .794 | 2.05157 | .859 | 2.16668 |
| .535 | 1.62528 | .600 | 1.72833 | .665 | 1.83404 | .730 | 1.94215 | .795 | 2.05331 | .860 | 2.16848 |
| .536 | 1.62684 | .601 | 1.72994 | .666 | 1.83568 | .731 | 1.94383 | .796 | 2.05505 | .861 | 2.17028 |
| .537 | 1.62840 | .602 | 1.73155 | .667 | 1.83733 | .732 | 1.94552 | .797 | 2.05679 | .862 | 2.17209 |
| .538 | 1.62996 | .603 | 1.73316 | .668 | 1.83897 | .733 | 1.94721 | .798 | 2.05853 | .863 | 2.17389 |
| .539 | 1.63152 | .604 | 1.73477 | .669 | 1.84061 | .734 | 1.94890 | .799 | 2.06027 | .864 | 2.17570 |
| .540 | 1.63309 | .605 | 1.73638 | .670 | 1.84226 | .735 | 1.95059 | .800 | 2.06202 | .865 | 2.17751 |
| .541 | 1.63465 | .606 | 1.73799 | .671 | 1.84391 | .736 | 1.95228 | .801 | 2.06377 | .866 | 2.17932 |
| .542 | 1.63623 | .607 | 1.73960 | .672 | 1.84556 | .737 | 1.95397 | .802 | 2.06552 | .867 | 2.18113 |

| Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. | Height. | Length. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| .868 | 2.18294 | .890 | 2.22303 | .912 | 2.26338 | .934 | 2.30373 | .956 | 2.34483 | .978 | 2.38673 |
| .869 | 2.18475 | .891 | 2.22486 | .913 | 2.26521 | .935 | 2.30557 | .957 | 2.34673 | .979 | 2.38864 |
| .870 | 2.18656 | .892 | 2.22670 | .914 | 2.26704 | .936 | 2.30741 | .958 | 2.34862 | .980 | 2.39055 |
| .871 | 2.18837 | .893 | 2.22854 | .915 | 2.26888 | .937 | 2.30926 | .959 | 2.35051 | .981 | 2.39247 |
| .872 | 2.19018 | .894 | 2.23038 | .916 | 2.27071 | .938 | 2.31111 | .960 | 2.35241 | .982 | 2.39439 |
| .873 | 2.19200 | .895 | 2.23222 | .917 | 2.27254 | .939 | 2.31295 | .961 | 2.35431 | .983 | 2.39631 |
| .874 | 2.19382 | .896 | 2.23406 | .918 | 2.27437 | .940 | 2.31479 | .962 | 2.35621 | .984 | 2.39823 |
| .875 | 2.19564 | .897 | 2.23590 | .919 | 2.27620 | .941 | 2.31666 | .963 | 2.35810 | .985 | 2.40016 |
| .876 | 2.19746 | .898 | 2.23774 | .920 | 2.27803 | .942 | 2.31852 | .964 | 2.36000 | .986 | 2.40208 |
| .877 | 2.19928 | .899 | 2.23958 | .921 | 2.27987 | .943 | 2.32038 | .965 | 2.36191 | .987 | 2.40400 |
| .878 | 2.20110 | .900 | 2.24142 | .922 | 2.28170 | .944 | 2.32224 | .966 | 2.36381 | .988 | 2.40592 |
| .879 | 2.20292 | .901 | 2.24325 | .923 | 2.28354 | .945 | 2.32411 | .967 | 2.36571 | .989 | 2.40784 |
| .880 | 2.20474 | .902 | 2.24508 | .924 | 2.28537 | .946 | 2.32598 | .968 | 2.36762 | .990 | 2.40976 |
| .881 | 2.20656 | .903 | 2.24691 | .925 | 2.28720 | .947 | 2.32785 | .969 | 2.36952 | .991 | 2.41169 |
| .882 | 2.20839 | .904 | 2.24874 | .926 | 2.28903 | .948 | 2.32972 | .970 | 2.37143 | .992 | 2.41362 |
| .883 | 2.21022 | .905 | 2.25057 | .927 | 2.29086 | .949 | 2.33160 | .971 | 2.37334 | .993 | 2.41556 |
| .884 | 2.21205 | .906 | 2.25240 | .928 | 2.29270 | .950 | 2.33348 | .972 | 2.37525 | .994 | 2.41749 |
| .885 | 2.21388 | .907 | 2.25423 | .929 | 2.29453 | .951 | 2.33537 | .973 | 2.37716 | .995 | 2.41943 |
| .886 | 2.21571 | .908 | 2.25606 | .930 | 2.29636 | .952 | 2.33726 | .974 | 2.37908 | .996 | 2.42136 |
| .887 | 2.21754 | .909 | 2.25789 | .931 | 2.29820 | .953 | 2.33915 | .975 | 2.38100 | .997 | 2.42329 |
| .888 | 2.21937 | .910 | 2.25972 | .932 | 2.30004 | .954 | 2.34104 | .976 | 2.38291 | .998 | 2.42522 |
| .889 | 2.22120 | .911 | 2.26155 | .933 | 2.30188 | .955 | 2.34293 | .977 | 2.38482 | .999 | 2.42715 |
| | | | | | | | | | | 1.000 | 2.42908 |

## TABLE XIX—SQUARE ROOTS.

| Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.0000000 | 36 | 6.0000000 | 71 | 8.4261498 | 106 | 10.2956301 | 141 | 11.8743421 |
| 2 | 1.4142136 | 37 | 6.0827625 | 72 | 8.4852814 | 107 | 10.3440804 | 142 | 11.9163753 |
| 3 | 1.7320508 | 38 | 6.1644140 | 73 | 8.5440037 | 108 | 10.3923048 | 143 | 11.9582607 |
| 4 | 2.0000000 | 39 | 6.2449980 | 74 | 8.6023253 | 109 | 10.4403065 | 144 | 12.0000000 |
| 5 | 2.2360680 | 40 | 6.3245553 | 75 | 8.6602540 | 110 | 10.4880885 | 145 | 12.0415946 |
| 6 | 2.4494897 | 41 | 6.4031242 | 76 | 8.7177979 | 111 | 10.5356538 | 146 | 12.0830460 |
| 7 | 2.6457513 | 42 | 6.4807407 | 77 | 8.7749644 | 112 | 10.5830052 | 147 | 12.1243557 |
| 8 | 2.8284271 | 43 | 6.5574385 | 78 | 8.8317609 | 113 | 10.6301458 | 148 | 12.1655251 |
| 9 | 3.0000000 | 44 | 6.6332496 | 79 | 8.8881944 | 114 | 10.6770783 | 149 | 12.2065556 |
| 10 | 3.1622777 | 45 | 6.7082039 | 80 | 8.9442719 | 115 | 10.7238053 | 150 | 12.2474487 |
| 11 | 3.3166248 | 46 | 6.7823300 | 81 | 9.0000000 | 116 | 10.7703296 | 151 | 12.2882057 |
| 12 | 3.4641016 | 47 | 6.8556546 | 82 | 9.0553851 | 117 | 10.8166538 | 152 | 12.3288280 |
| 13 | 3.6055513 | 48 | 6.9282032 | 83 | 9.1104336 | 118 | 10.8627805 | 153 | 12.3693169 |
| 14 | 3.7416574 | 49 | 7.0000000 | 84 | 9.1651514 | 119 | 10.9087121 | 154 | 12.4096736 |
| 15 | 3.8729833 | 50 | 7.0710678 | 85 | 9.2195445 | 120 | 10.9544512 | 155 | 12.4498996 |
| 16 | 4.0000000 | 51 | 7.1414284 | 86 | 9.2736185 | 121 | 11.0000000 | 156 | 12.4899960 |
| 17 | 4.1231056 | 52 | 7.2111026 | 87 | 9.3273791 | 122 | 11.0453610 | 157 | 12.5299641 |
| 18 | 4.2426407 | 53 | 7.2801099 | 88 | 9.3808315 | 123 | 11.0905365 | 158 | 12.5698051 |
| 19 | 4.3588989 | 54 | 7.3484692 | 89 | 9.4339811 | 124 | 11.1355287 | 159 | 12.6095202 |
| 20 | 4.4721360 | 55 | 7.4161985 | 90 | 9.4868330 | 125 | 11.1803399 | 160 | 12.6491106 |
| 21 | 4.5825757 | 56 | 7.4833148 | 91 | 9.5393920 | 126 | 11.2249722 | 161 | 12.6885775 |
| 22 | 4.6904158 | 57 | 7.5498344 | 92 | 9.5916630 | 127 | 11.2694277 | 162 | 12.7279221 |
| 23 | 4.7958315 | 58 | 7 6157731 | 93 | 9.6436508 | 128 | 11.3137085 | 163 | 12.7671453 |
| 24 | 4.8989795 | 59 | 7.6811457 | 94 | 9.6953597 | 129 | 11.3578167 | 164 | 12.8062485 |
| 25 | 5.0000000 | 60 | 7.7459667 | 95 | 9.7467943 | 130 | 11.4017543 | 165 | 12.8452326 |
| 26 | 5.0990195 | 61 | 7.8102497 | 96 | 9.7979590 | 131 | 11.4455231 | 166 | 12.8840987 |
| 27 | 5.1961524 | 62 | 7.8740079 | 97 | 9.8488578 | 132 | 11.4891253 | 167 | 12.9228480 |
| 28 | 5.2915026 | 63 | 7.9372539 | 98 | 9.8994949 | 133 | 11.5325626 | 168 | 12.9614814 |
| 29 | 5.3851648 | 64 | 8.0000000 | 99 | 9.9498744 | 134 | 11.5758369 | 169 | 13.0000000 |
| 30 | 5 4772256 | 65 | 8.0622577 | 100 | 10.0000000 | 135 | 11.6189500 | 170 | 13.0384048 |
| 31 | 5.5677644 | 66 | 8.1240384 | 101 | 10.0498756 | 136 | 11.6619038 | 171 | 13.0766968 |
| 32 | 5.6568542 | 67 | 8.1853528 | 102 | 10.0995049 | 137 | 11.7046999 | 172 | 13.1148770 |
| 33 | 5.7445626 | 68 | 8.2462113 | 103 | 10.1488916 | 138 | 11.7473444 | 173 | 13.1529464 |
| 34 | 5.8309519 | 69 | 8.3066239 | 104 | 10.1980390 | 139 | 11.7898261 | 174 | 13.1909060 |
| *35* | *5.9160798* | *70* | 8.3666003 | 105 | 10.2469508 | 140 | 11.8321596 | 175 | 13.2287566 |

| Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 176 | 13.2664992 | 241 | 15.5241747 | 306 | 17.4928557 | 371 | 19.2613603 | 436 | 20.8806130 |
| 177 | 13.3041347 | 242 | 15.5563492 | 307 | 17.5214155 | 372 | 19.2873015 | 437 | 20.9045450 |
| 178 | 13.3416641 | 243 | 15.5884573 | 308 | 17.5499288 | 373 | 19.3132079 | 438 | 20.9284495 |
| 179 | 13.3790882 | 244 | 15.6204994 | 309 | 17.5783958 | 374 | 19.3390796 | 439 | 20.9523268 |
| 180 | 13.4164079 | 245 | 15.6524758 | 310 | 17.6068169 | 375 | 19.3649167 | 440 | 20.9761770 |
| 181 | 13.4536240 | 246 | 15.6843871 | 311 | 17.6351921 | 376 | 19.3907194 | 441 | 21.0000000 |
| 182 | 13.4907376 | 247 | 15.7162336 | 312 | 17.6635217 | 377 | 19.4164878 | 442 | 21.0237960 |
| 183 | 13.5277493 | 248 | 15.7480157 | 313 | 17.6918060 | 378 | 19.4422221 | 443 | 21.0475652 |
| 184 | 13.5646600 | 249 | 15.7797338 | 314 | 17.7200451 | 379 | 19.4679223 | 444 | 21.0713075 |
| 185 | 13.6014705 | 250 | 15.8113883 | 315 | 17.7482393 | 380 | 19.4935887 | 445 | 21.0950231 |
| 186 | 13.6381817 | 251 | 15.8429795 | 316 | 17.7763888 | 381 | 19.5192213 | 446 | 21.1187121 |
| 187 | 13.6747943 | 252 | 15.8745079 | 317 | 17.8044938 | 382 | 19.5448203 | 447 | 21.1423745 |
| 188 | 13.7113092 | 253 | 15.9059737 | 318 | 17.8325545 | 383 | 19.5703858 | 448 | 21.1660105 |
| 189 | 13.7477271 | 254 | 15.9373775 | 319 | 17.8605711 | 384 | 19.5959179 | 449 | 21.1896201 |
| 190 | 13.7840488 | 255 | 15.9687194 | 320 | 17.8885438 | 385 | 19.6214169 | 450 | 21.2132034 |
| 191 | 13.8202750 | 256 | 16.0000000 | 321 | 17.9164729 | 386 | 19.6468827 | 451 | 21.2367606 |
| 192 | 13.8564065 | 257 | 16.0312195 | 322 | 17.9443584 | 387 | 19.6723156 | 452 | 21.2602916 |
| 193 | 13.8924440 | 258 | 16.0623784 | 323 | 17.9722008 | 388 | 19.6977156 | 453 | 21.2837967 |
| 194 | 13.9283883 | 259 | 16.0934769 | 324 | 18.0000000 | 389 | 19.7230829 | 454 | 21.3072758 |
| 195 | 13.9642400 | 260 | 16.1245155 | 325 | 18.0277564 | 390 | 19.7484177 | 455 | 21.3307290 |
| 196 | 14.0000000 | 261 | 16.1554944 | 326 | 18.0554701 | 391 | 19.7737199 | 456 | 21.3541565 |
| 197 | 14.0356688 | 262 | 16.1864141 | 327 | 18.0831413 | 392 | 19.7989899 | 457 | 21.3775583 |
| 198 | 14.0712473 | 263 | 16.2172747 | 328 | 18.1107703 | 393 | 19.8242276 | 458 | 21.4009346 |
| 199 | 14.1067360 | 264 | 16.2480768 | 329 | 18.1383571 | 394 | 19.8494332 | 459 | 21.4242853 |
| 200 | 14.1421356 | 265 | 16.2788206 | 330 | 18.1659021 | 395 | 19.8746069 | 460 | 21.4476106 |
| 201 | 14.1774469 | 266 | 16.3095064 | 331 | 18.1934054 | 396 | 19.8997487 | 461 | 21.4709106 |
| 202 | 14.2126704 | 267 | 16.3401346 | 332 | 18.2208672 | 397 | 19.9248588 | 462 | 21.4941853 |
| 203 | 14.2478068 | 268 | 16.3707055 | 333 | 18.2482876 | 398 | 19.9499373 | 463 | 21.5174348 |
| 204 | 14.2828569 | 269 | 16.4012195 | 334 | 18.2756669 | 399 | 19.9749844 | 464 | 21.5406592 |
| 205 | 14.3178211 | 270 | 16.4316767 | 335 | 18.3030052 | 400 | 20.0000000 | 465 | 21.5638587 |
| 206 | 14.3527001 | 271 | 16.4620776 | 336 | 18.3303028 | 401 | 20.0249844 | 466 | 21.5870331 |
| 207 | 14.3874946 | 272 | 16.4924225 | 337 | 18.3575598 | 402 | 20.0499377 | 467 | 21.6101828 |
| 208 | 14.4222051 | 273 | 16.5227116 | 338 | 18.3847763 | 403 | 20.0748599 | 468 | 21.6333077 |
| 209 | 14.4568323 | 274 | 16.5529454 | 339 | 18.4119526 | 404 | 20.0997512 | 469 | 21.6564078 |
| 210 | 14.4913767 | 275 | 16.5831240 | 340 | 18.4390889 | 405 | 20.1246118 | 470 | 21.6794834 |
| 211 | 14.5258390 | 276 | 16.6132477 | 341 | 18.4661853 | 406 | 20.1494417 | 471 | 21.7025344 |
| 212 | 14.5602198 | 277 | 16.6433170 | 342 | 18.4932420 | 407 | 20.1742410 | 472 | 21.7255610 |
| 213 | 14.5945195 | 278 | 16.6733320 | 343 | 18.5202592 | 408 | 20.1990099 | 473 | 21.7485632 |
| 214 | 14.6287388 | 279 | 16.7032931 | 344 | 18.5472370 | 409 | 20.2237484 | 474 | 21.7715411 |
| 215 | 14.6628783 | 280 | 16.7332005 | 345 | 18.5741756 | 410 | 20.2484567 | 475 | 21.7944947 |
| 216 | 14.6969385 | 281 | 16.7630546 | 346 | 18.6010752 | 411 | 20.2731349 | 476 | 21.8174242 |
| 217 | 14.7309199 | 282 | 16.7928556 | 347 | 18.6279360 | 412 | 20.2977831 | 477 | 21.8403297 |
| 218 | 14.7648231 | 283 | 16.8226038 | 348 | 18.6547581 | 413 | 20.3224014 | 478 | 21.8632111 |
| 219 | 14.7986486 | 284 | 16.8522995 | 349 | 18.6815417 | 414 | 20.3469899 | 479 | 21.8860686 |
| 220 | 14.8323970 | 285 | 16.8819430 | 350 | 18.7082869 | 415 | 20.3715488 | 480 | 21.9089023 |
| 221 | 14.8660687 | 286 | 16.9115345 | 351 | 18.7349940 | 416 | 20.3960781 | 481 | 21.9317122 |
| 222 | 14.8996644 | 287 | 16.9410743 | 352 | 18.7616630 | 417 | 20.4205779 | 482 | 21.9544984 |
| 223 | 14.9331845 | 288 | 16.9705627 | 353 | 18.7882942 | 418 | 20.4450483 | 483 | 21.9772610 |
| 224 | 14.9666295 | 289 | 17.0000000 | 354 | 18.8148877 | 419 | 20.4694895 | 484 | 22.0000000 |
| 225 | 15.0000000 | 290 | 17.0293864 | 355 | 18.8414437 | 420 | 20.4939015 | 485 | 22.0227155 |
| 226 | 15.0332964 | 291 | 17.0587221 | 356 | 18.8679623 | 421 | 20.5182845 | 486 | 22.0454077 |
| 227 | 15.0665192 | 292 | 17.0880075 | 357 | 18.8944436 | 422 | 20.5426386 | 487 | 22.0680765 |
| 228 | 15.0996689 | 293 | 17.1172428 | 358 | 18.9208879 | 423 | 20.5669638 | 488 | 22.0907220 |
| 229 | 15.1327460 | 294 | 17.1464282 | 359 | 18.9472953 | 424 | 20.5912603 | 489 | 22.1133444 |
| 230 | 15.1657509 | 295 | 17.1755640 | 360 | 18.9736660 | 425 | 20.6155281 | 490 | 22.1359436 |
| 231 | 15.1986842 | 296 | 17.2046505 | 361 | 19.0000000 | 426 | 20.6397674 | 491 | 22.1585198 |
| 232 | 15.2315462 | 297 | 17.2336879 | 362 | 19.0262976 | 427 | 20.6639783 | 492 | 22.1810730 |
| 233 | 15.2643375 | 298 | 17.2626765 | 363 | 19.0525589 | 428 | 20.6881609 | 493 | 22.2036033 |
| 234 | 15.2970585 | 299 | 17.2916165 | 364 | 19.0787840 | 429 | 20.7123152 | 494 | 22.2261108 |
| 235 | 15.3297097 | 300 | 17.3205081 | 365 | 19.1049732 | 430 | 20.7364414 | 495 | 22.2485955 |
| 236 | 15.3622915 | 301 | 17.3493516 | 366 | 19.1311265 | 431 | 20.7605395 | 496 | 22.2710575 |
| 237 | 15.3948043 | 302 | 17.3781472 | 367 | 19.1572441 | 432 | 20.7846097 | 497 | 22.2934968 |
| 238 | 15.4272486 | 303 | 17.4068952 | 368 | 19.1833261 | 433 | 20.8086520 | 498 | 22.3159136 |
| 239 | 15.4596248 | 304 | 17.4355958 | 369 | 19.2093727 | 434 | 20.8326667 | 499 | 22.3383079 |
| 240 | 15.4919334 | 305 | 17.4642492 | 370 | 19.2353841 | 435 | 20.8566536 | 500 | 22.3606798 |

| Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 501 | 22.3830293 | 566 | 23.7907545 | 631 | 25.1197134 | 696 | 26.3818119 | 761 | 27.5862284 |
| 502 | 22.4053565 | 567 | 23.8117618 | 632 | 25.1396102 | 697 | 26.4007576 | 762 | 27.6043475 |
| 503 | 22.4276615 | 568 | 23.8327506 | 633 | 25.1594913 | 698 | 26.4196896 | 763 | 27.6224546 |
| 504 | 22.4499443 | 569 | 23.8537209 | 634 | 25.1793566 | 699 | 26.4386081 | 764 | 27.6405499 |
| 505 | 22.4722051 | 570 | 23.8746728 | 635 | 25.1992063 | 700 | 26.4575131 | 765 | 27.6586334 |
| 506 | 22.4944438 | 571 | 23.8956063 | 636 | 25.2190404 | 701 | 26.4764046 | 766 | 27.6767050 |
| 507 | 22.5166605 | 572 | 23.9165215 | 637 | 25.2388589 | 702 | 26.4952826 | 767 | 27.6947648 |
| 508 | 22.5388553 | 573 | 23.9374184 | 638 | 25.2586619 | 703 | 26.5141472 | 768 | 27.7128129 |
| 509 | 22.5610283 | 574 | 23.9582971 | 639 | 25.2784493 | 704 | 26.5329983 | 769 | 27.7308492 |
| 510 | 22.5831796 | 575 | 23.9791576 | 640 | 25.2982213 | 705 | 26.5518361 | 770 | 27.7488739 |
| 511 | 22.6053091 | 576 | 24.0000000 | 641 | 25.3179778 | 706 | 26.5706605 | 771 | 27.7668868 |
| 512 | 22.6274170 | 577 | 24.0208243 | 642 | 25.3377189 | 707 | 26.5894716 | 772 | 27.7848880 |
| 513 | 22.6495033 | 578 | 24.0416306 | 643 | 25.3574447 | 708 | 26.6082694 | 773 | 27.8028775 |
| 514 | 22.6715681 | 579 | 24.0624188 | 644 | 25.3771551 | 709 | 26.6270539 | 774 | 27.8208555 |
| 515 | 22.6936114 | 580 | 24.0831891 | 645 | 25.3968502 | 710 | 26.6458252 | 775 | 27.8388218 |
| 516 | 22.7156334 | 581 | 24.1039416 | 646 | 25.4165301 | 711 | 26.6645833 | 776 | 27.8567766 |
| 517 | 22.7376340 | 582 | 24.1246762 | 647 | 25.4361947 | 712 | 26.6833281 | 777 | 27.8747197 |
| 518 | 22.7596134 | 583 | 24.1453929 | 648 | 25.4558441 | 713 | 26.7020598 | 778 | 27.8926514 |
| 519 | 22.7815715 | 584 | 24.1660919 | 649 | 25.4754784 | 714 | 26.7207784 | 779 | 27.9105715 |
| 520 | 22.8035085 | 585 | 24.1867732 | 650 | 25.4950976 | 715 | 26.7394839 | 780 | 27.9284801 |
| 521 | 22.8254244 | 586 | 24.2074369 | 651 | 25.5147016 | 716 | 26.7581763 | 781 | 27.9463772 |
| 522 | 22.8473193 | 587 | 24.2280829 | 652 | 25.5342907 | 717 | 26.7768557 | 782 | 27.9642629 |
| 523 | 22.8691933 | 588 | 24.2487113 | 653 | 25.5538647 | 718 | 26.7955220 | 783 | 27.9821372 |
| 524 | 22.8910463 | 589 | 24.2693222 | 654 | 25.5734237 | 719 | 26.8141754 | 784 | 28.0000000 |
| 525 | 22.9128785 | 590 | 24.2899156 | 655 | 25.5929678 | 720 | 26.8328157 | 785 | 28.0178515 |
| 526 | 22.9346899 | 591 | 24.3104916 | 656 | 25.6124969 | 721 | 26.8514432 | 786 | 28.0356915 |
| 527 | 22.9564806 | 592 | 24.3310501 | 657 | 25.6320112 | 722 | 26.8700577 | 787 | 28.0535203 |
| 528 | 22.9782506 | 593 | 24.3515913 | 658 | 25.6515107 | 723 | 26.8886593 | 788 | 28.0713377 |
| 529 | 23.0000000 | 594 | 24.3721152 | 659 | 25.6709953 | 724 | 26.9072481 | 789 | 28.0891438 |
| 530 | 23.0217289 | 595 | 24.3926218 | 660 | 25.6904652 | 725 | 26.9258240 | 790 | 28.1069386 |
| 531 | 23.0434372 | 596 | 24.4131112 | 661 | 25.7099203 | 726 | 26.9443872 | 791 | 28.1247222 |
| 532 | 23.0651252 | 597 | 24.4335834 | 662 | 25.7293607 | 727 | 26.9629375 | 792 | 28.1424946 |
| 533 | 23.0867928 | 598 | 24.4540385 | 663 | 25.7487864 | 728 | 26.9814751 | 793 | 28.1602557 |
| 534 | 23.1084400 | 599 | 24.4744765 | 664 | 25.7681975 | 729 | 27.0000000 | 794 | 28.1780056 |
| 535 | 23.1300670 | 600 | 24.4948974 | 665 | 25.7875939 | 730 | 27.0185122 | 795 | 28.1957444 |
| 536 | 23.1516738 | 601 | 24.5153013 | 666 | 25.8069758 | 731 | 27.0370117 | 796 | 28.2134720 |
| 537 | 23.1732605 | 602 | 24.5356883 | 667 | 25.8263431 | 732 | 27.0554985 | 797 | 28.2311884 |
| 538 | 23.1948270 | 603 | 24.5560583 | 668 | 25.8456960 | 733 | 27.0739727 | 798 | 28.2488938 |
| 539 | 23.2163735 | 604 | 24.5764115 | 669 | 25.8650343 | 734 | 27.0924344 | 799 | 28.2665881 |
| 540 | 23.2379001 | 605 | 24.5967478 | 670 | 25.8843582 | 735 | 27.1108834 | 800 | 28.2842712 |
| 541 | 23.2594067 | 606 | 24.6170673 | 671 | 25.9036677 | 736 | 27.1293199 | 801 | 28.3019434 |
| 542 | 23.2808935 | 607 | 24.6373700 | 672 | 25.9229628 | 737 | 27.1477439 | 802 | 28.3196045 |
| 543 | 23.3023604 | 608 | 24.6576560 | 673 | 25.9422435 | 738 | 27.1661554 | 803 | 28.3372546 |
| 544 | 23.3238076 | 609 | 24.6779254 | 674 | 25.9615100 | 739 | 27.1845544 | 804 | 28.3548938 |
| 545 | 23.3452351 | 610 | 24.6981781 | 675 | 25.9807621 | 740 | 27.2029410 | 805 | 28.3725219 |
| 546 | 23.3666429 | 611 | 24.7184142 | 676 | 26.0000000 | 741 | 27.2213152 | 806 | 28.3901391 |
| 547 | 23.3880311 | 612 | 24.7386338 | 677 | 26.0192237 | 742 | 27.2396769 | 807 | 28.4077454 |
| 548 | 23.4093998 | 613 | 24.7588368 | 678 | 26.0384331 | 743 | 27.2580263 | 808 | 28.4253408 |
| 549 | 23.4307490 | 614 | 24.7790234 | 679 | 26.0576284 | 744 | 27.2763634 | 809 | 28.4429253 |
| 550 | 23.4520788 | 615 | 24.7991935 | 680 | 26.0768096 | 745 | 27.2946881 | 810 | 28.4604989 |
| 551 | 23.4733892 | 616 | 24.8193473 | 681 | 26.0959767 | 746 | 27.3130006 | 811 | 28.4780617 |
| 552 | 23.4946802 | 617 | 24.8394847 | 682 | 26.1151297 | 747 | 27.3313007 | 812 | 28.4956137 |
| 553 | 23.5159520 | 618 | 24.8596058 | 683 | 26.1342687 | 748 | 27.3495887 | 813 | 28.5131549 |
| 554 | 23.5372046 | 619 | 24.8797106 | 684 | 26.1533937 | 749 | 27.3678644 | 814 | 28.5306852 |
| 555 | 23.5584380 | 620 | 24.8997992 | 685 | 26.1725047 | 750 | 27.3861279 | 815 | 28.5482048 |
| 556 | 23.5796522 | 621 | 24.9198716 | 686 | 26.1916017 | 751 | 27.4043792 | 816 | 28.5657137 |
| 557 | 23.6008474 | 622 | 24.9399278 | 687 | 26.2106848 | 752 | 27.4226184 | 817 | 28.5832119 |
| 558 | 23.6220236 | 623 | 24.9599679 | 688 | 26.2297541 | 753 | 27.4408455 | 818 | 28.6006993 |
| 559 | 23.6431808 | 624 | 24.9799920 | 689 | 26.2488095 | 754 | 27.4590604 | 819 | 28.6181760 |
| 560 | 23.6643191 | 625 | 25.0000000 | 690 | 26.2678511 | 755 | 27.4772633 | 820 | 28.6356421 |
| 561 | 23.6854386 | 626 | 25.0199920 | 691 | 26.2868789 | 756 | 27.4954542 | 821 | 28.6530976 |
| 562 | 23.7065392 | 627 | 25.0399681 | 692 | 26.3058929 | 757 | 27.5136330 | 822 | 28.6705424 |
| 563 | 23.7276210 | 628 | 25.0599282 | 693 | 26.3248932 | 758 | 27.5317998 | 823 | 28.6879766 |
| 564 | 23.7486842 | 629 | 25.0798724 | 694 | 26.3438797 | 759 | 27.5499546 | 824 | 28.7054002 |
| 565 | 23.7697286 | 630 | 25.0998008 | 695 | 26.3628527 | 760 | 27.5680975 | 825 | 28.7228132 |

| Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. | Nos. | Square Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 826 | 28.7402157 | 881 | 29.6816442 | 936 | 30.5941171 | 991 | 31.4801525 | 1046 | 32.3419233 |
| 827 | 28.7576077 | 882 | 29.6984848 | 937 | 30.6104557 | 992 | 31.4960315 | 1047 | 32.3573794 |
| 828 | 28.7749891 | 883 | 29.7153159 | 938 | 30.6267857 | 993 | 31.5119025 | 1048 | 32.3728281 |
| 829 | 28.7923601 | 884 | 29.7321375 | 939 | 30.6431069 | 994 | 31.5277655 | 1049 | 32.3882695 |
| 830 | 28.8097206 | 885 | 29.7489496 | 940 | 30.6594194 | 995 | 31.5436206 | 1050 | 32.4037035 |
| 831 | 28.8270706 | 886 | 29.7657521 | 941 | 30.6757233 | 996 | 31.5594677 | 1051 | 32.4191301 |
| 832 | 28.8444102 | 887 | 29.7825452 | 942 | 30.6920185 | 997 | 31.5753068 | 1052 | 32.4345495 |
| 833 | 28.8617394 | 888 | 29.7993289 | 943 | 30.7083051 | 998 | 31.5911380 | 1053 | 32.4499615 |
| 834 | 28.8790582 | 889 | 29.8161030 | 944 | 30.7245830 | 999 | 31.6069613 | 1054 | 32.4653662 |
| 835 | 28.8963666 | 890 | 29.8328678 | 945 | 30.7408523 | 1000 | 31.6227766 | 1055 | 32.4807635 |
| 836 | 28.9136646 | 891 | 29.8496231 | 946 | 30.7571130 | 1001 | 31.6385840 | 1056 | 32.4961536 |
| 837 | 28.9309523 | 892 | 29.8663690 | 947 | 30.7733651 | 1002 | 31.6543836 | 1057 | 32.5115364 |
| 838 | 28.9482297 | 893 | 29.8831056 | 948 | 30.7896086 | 1003 | 31.6701752 | 1058 | 32.5269119 |
| 839 | 28.9654967 | 894 | 29.8998328 | 949 | 30.8058436 | 1004 | 31.6859590 | 1059 | 32.5422802 |
| 840 | 28.9827535 | 895 | 29.9165506 | 950 | 30.8220700 | 1005 | 31.7017349 | 1060 | 32.5576412 |
| 841 | 29.0000000 | 896 | 29.9332591 | 951 | 30.8382879 | 1006 | 31.7175030 | 1061 | 32.5729949 |
| 842 | 29.0172363 | 897 | 29.9499583 | 952 | 30.8544972 | 1007 | 31.7332633 | 1062 | 32.5883415 |
| 843 | 29.0344623 | 898 | 29.9666481 | 953 | 30.8706984 | 1008 | 31.7490157 | 1063 | 32.6036807 |
| 844 | 29.0516781 | 899 | 29.9833287 | 954 | 30.8868904 | 1009 | 31.7647603 | 1064 | 32.6190129 |
| 845 | 29.0688837 | 900 | 30.0000000 | 955 | 30.9030743 | 1010 | 31.7804972 | 1065 | 32.6343377 |
| 846 | 29.0860791 | 901 | 30.0166620 | 956 | 30.9192497 | 1011 | 31.7962262 | 1066 | 32.6496554 |
| 847 | 29.1032644 | 902 | 30.0333148 | 957 | 30.9354166 | 1012 | 31.8119474 | 1067 | 32.6649659 |
| 848 | 29.1204396 | 903 | 30.0499584 | 958 | 30.9515751 | 1013 | 31.8276609 | 1068 | 32.6802693 |
| 849 | 29.1376046 | 904 | 30.0675928 | 959 | 30.9677251 | 1014 | 31.8433666 | 1069 | 32.6955654 |
| 850 | 29.1547595 | 905 | 30.0832179 | 960 | 30.9838668 | 1015 | 31.8590646 | 1070 | 32.7108544 |
| 851 | 29.1719043 | 906 | 30.0998339 | 961 | 31.0000000 | 1016 | 31.8747549 | 1071 | 32.7261363 |
| 852 | 29.1890390 | 907 | 30.1164407 | 962 | 31.0161248 | 1017 | 31.8904374 | 1072 | 32.7414111 |
| 853 | 29.2061637 | 908 | 30.1330383 | 963 | 31.0322413 | 1018 | 31.9061123 | 1073 | 32.7566787 |
| 854 | 29.2232784 | 909 | 30.1496269 | 964 | 31.0483494 | 1019 | 31.9217794 | 1074 | 32.7719392 |
| 855 | 29.2403830 | 910 | 30.1662063 | 965 | 31.0644491 | 1020 | 31.9374388 | 1075 | 32.7871926 |
| 856 | 29.2574777 | 911 | 30.1827765 | 966 | 31.0805405 | 1021 | 31.9530906 | 1076 | 32.8024389 |
| 857 | 29.2745623 | 912 | 30.1993377 | 967 | 31.0966236 | 1022 | 31.9687347 | 1077 | 32.8176782 |
| 858 | 29.2916370 | 913 | 30.2158899 | 968 | 31.1126984 | 1023 | 31.9843712 | 1078 | 32.8329103 |
| 859 | 29.3087018 | 914 | 30.2324329 | 969 | 31.1287648 | 1024 | 32.0000000 | 1079 | 32.8481354 |
| 860 | 29.3257566 | 915 | 30.2489669 | 970 | 31.1448230 | 1025 | 32.0156212 | 1080 | 32.8633535 |
| 861 | 29.3428015 | 916 | 30.2654919 | 971 | 31.1608729 | 1026 | 32.0312348 | 1081 | 32.8785644 |
| 862 | 29.3598365 | 917 | 30.2820079 | 972 | 31.1769145 | 1027 | 32.0468407 | 1082 | 32.8937684 |
| 863 | 29.3768616 | 918 | 30.2985148 | 973 | 31.1929479 | 1028 | 32.0624391 | 1083 | 32.9089653 |
| 864 | 29.3938769 | 919 | 30.3150128 | 974 | 31.2089731 | 1029 | 32.0780298 | 1084 | 32.9241553 |
| 865 | 29.4108823 | 920 | 30.3315018 | 975 | 31.2249900 | 1030 | 32.0936131 | 1085 | 32.9393382 |
| 866 | 29.4278779 | 921 | 30.3479818 | 976 | 31.2409987 | 1031 | 32.1091887 | 1086 | 32.9545141 |
| 867 | 29.4448637 | 922 | 30.3644529 | 977 | 31.2569992 | 1032 | 32.1247568 | 1087 | 32.9696830 |
| 868 | 29.4618397 | 923 | 30.3809151 | 978 | 31.2729915 | 1033 | 32.1403173 | 1088 | 32.9848450 |
| 869 | 29.4788059 | 924 | 30.3973683 | 979 | 31.2889757 | 1034 | 32.1558704 | 1089 | 33.0000000 |
| 870 | 29.4957624 | 925 | 30.4138127 | 980 | 31.3049517 | 1035 | 32.1714159 | 1090 | 33.0151480 |
| 871 | 29.5127091 | 926 | 30.4302481 | 981 | 31.3209195 | 1036 | 32.1869539 | 1091 | 33.0302891 |
| 872 | 29.5296461 | 927 | 30.4466747 | 982 | 31.3368792 | 1037 | 32.2024844 | 1092 | 33.0454233 |
| 873 | 29.5465734 | 928 | 30.4630924 | 983 | 31.3528308 | 1038 | 32.2180074 | 1093 | 33.0605505 |
| 874 | 29.5634910 | 929 | 30.4795013 | 984 | 31.3687743 | 1039 | 32.2335229 | 1094 | 33.0756708 |
| 875 | 29.5803989 | 930 | 30.4959014 | 985 | 31.3847097 | 1040 | 32.2490310 | 1095 | 33.0907842 |
| 876 | 29.5972972 | 931 | 30.5122926 | 986 | 31.4006369 | 1041 | 32.2645316 | 1096 | 33.1058907 |
| 877 | 29.6141858 | 932 | 30.5286750 | 987 | 31.4165561 | 1042 | 32.2800248 | 1097 | 33.1209903 |
| 878 | 29.6310648 | 933 | 30.5450487 | 988 | 31.4324673 | 1043 | 32.2955105 | 1098 | 33.1360830 |
| 879 | 29.6479342 | 934 | 30.5614136 | 989 | 31.4483704 | 1044 | 32.3109888 | 1099 | 33.1511689 |
| 880 | 29.6647939 | 935 | 30.5777697 | 990 | 31.4642654 | 1045 | 32.3264598 | 1100 | 33.1662479 |

## TABLE XX—CUBE ROOTS.

| Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 1.0000000 | 64 | 4.0000000 | 127 | 5.0265257 | 190 | 5.7488971 | 253 | 6.3247035 |
| 2 | 1.2599210 | 65 | 4.0207256 | 128 | 5.0396842 | 191 | 5.7589652 | 254 | 6.3330256 |
| 3 | 1.4422496 | 66 | 4.0412401 | 129 | 5.0527743 | 192 | 5.7689982 | 255 | 6.3413257 |
| 4 | 1.5874011 | 67 | 4.0615480 | 130 | 5.0657970 | 193 | 5.7789966 | 256 | 6.3496042 |
| 5 | 1.7099759 | 68 | 4.0816551 | 131 | 5.0787531 | 194 | 5.7889604 | 257 | 6.3578611 |
| 6 | 1.8171206 | 69 | 4.1015661 | 132 | 5.0916434 | 195 | 5.7988900 | 258 | 6.3660968 |
| 7 | 1.9129312 | 70 | 4.1212853 | 133 | 5.1044687 | 196 | 5.8087857 | 259 | 6.3743111 |
| 8 | 2.0000000 | 71 | 4.1408178 | 134 | 5.1172299 | 197 | 5.8186479 | 260 | 6.3825043 |
| 9 | 2.0800837 | 72 | 4.1601676 | 135 | 5.1299278 | 198 | 5.8284767 | 261 | 6.3906765 |
| 10 | 2.1544347 | 73 | 4.1793390 | 136 | 5.1425632 | 199 | 5.8382725 | 262 | 6.3988279 |
| 11 | 2.2239801 | 74 | 4.1983364 | 137 | 5.1551367 | 200 | 5.8480355 | 263 | 6.4069584 |
| 12 | 2.2894286 | 75 | 4.2171633 | 138 | 5.1676493 | 201 | 5.8577660 | 264 | 6.4150687 |
| 13 | 2.3513347 | 76 | 4.2358236 | 139 | 5.1801015 | 202 | 5.8674643 | 265 | 6.4231583 |
| 14 | 2.4101422 | 77 | 4.2543210 | 140 | 5.1924941 | 203 | 5.8771307 | 266 | 6.4312276 |
| 15 | 2.4662121 | 78 | 4.2726586 | 141 | 5.2048279 | 204 | 5.8867653 | 267 | 6.4392767 |
| 16 | 2.5198421 | 79 | 4.2908404 | 142 | 5.2171034 | 205 | 5.8963685 | 268 | 6.4473057 |
| 17 | 2.5712816 | 80 | 4.3088695 | 143 | 5.2293215 | 206 | 5.9059406 | 269 | 6.4553148 |
| 18 | 2.6207414 | 81 | 4.3267487 | 144 | 5.2414828 | 207 | 5.9154817 | 270 | 6.4633041 |
| 19 | 2.6684016 | 82 | 4.3444815 | 145 | 5.2535879 | 208 | 5.9249921 | 271 | 6.4712736 |
| 20 | 2.7144177 | 83 | 4.3620707 | 146 | 5.2656374 | 209 | 5.9344721 | 272 | 6.4792236 |
| 21 | 2.7589243 | 84 | 4.3795191 | 147 | 5.2776321 | 210 | 5.9439220 | 273 | 6.4871541 |
| 22 | 2.8020393 | 85 | 4.3968296 | 148 | 5.2895728 | 211 | 5.9533418 | 274 | 6.4950653 |
| 23 | 2.8438670 | 86 | 4.4140049 | 149 | 5.3014592 | 212 | 5.9627320 | 275 | 6.5029572 |
| 24 | 2.8844991 | 87 | 4.4310476 | 150 | 5.3132925 | 213 | 5.9720926 | 276 | 6.5108300 |
| 25 | 2.9240177 | 88 | 4.4479602 | 151 | 5.3250740 | 214 | 5.9814240 | 277 | 6.5186839 |
| 26 | 2.9624960 | 89 | 4.4647451 | 152 | 5.3368033 | 215 | 5.9907264 | 278 | 6.5265189 |
| 27 | 3.0000000 | 90 | 4.4814047 | 153 | 5.3484812 | 216 | 6.0000000 | 279 | 6.5343851 |
| 28 | 3.0365889 | 91 | 4.4979414 | 154 | 5.3601084 | 217 | 6.0092450 | 280 | 6.5421326 |
| 29 | 3.0723168 | 92 | 4.5143574 | 155 | 5.3716854 | 218 | 6.0184617 | 281 | 6.5499116 |
| 30 | 3.1072325 | 93 | 4.5306549 | 156 | 5.3832126 | 219 | 6.0276502 | 282 | 6.5576722 |
| 31 | 3.1413806 | 94 | 4.5468359 | 157 | 5.3946907 | 220 | 6.0368107 | 283 | 6.5654144 |
| 32 | 3.1748021 | 95 | 4.5629026 | 158 | 5.4061202 | 221 | 6.0459435 | 284 | 6.5731385 |
| 33 | 3.2075343 | 96 | 4.5788570 | 159 | 5.4175015 | 222 | 6.0550489 | 285 | 6.5808443 |
| 34 | 3.2396118 | 97 | 4.5947009 | 160 | 5.4288352 | 223 | 6.0641270 | 286 | 6.5885323 |
| 35 | 3.2710663 | 98 | 4.6104363 | 161 | 5.4401218 | 224 | 6.0731779 | 287 | 6.5962023 |
| 36 | 3.3019272 | 99 | 4.6260650 | 162 | 5.4513618 | 225 | 6.0822020 | 288 | 6.6038545 |
| 37 | 3.3322218 | 100 | 4.6415888 | 163 | 5.4625556 | 226 | 6.0911994 | 289 | 6.6114890 |
| 38 | 3.3619754 | 101 | 4.6570095 | 164 | 5.4737037 | 227 | 6.1001702 | 290 | 6.6191060 |
| 39 | 3.3912114 | 102 | 4.6723287 | 165 | 5.4848066 | 228 | 6.1091147 | 291 | 6.6267054 |
| 40 | 3.4199519 | 103 | 4.6875482 | 166 | 5.4958647 | 229 | 6.1180332 | 292 | 6.6342874 |
| 41 | 3.4482172 | 104 | 4.7026694 | 167 | 5.5068784 | 230 | 6.1269257 | 293 | 6.6418522 |
| 42 | 3.4760266 | 105 | 4.7176940 | 168 | 5.5178484 | 231 | 6.1357924 | 294 | 6.6493998 |
| 43 | 3.5033981 | 106 | 4.7326235 | 169 | 5.5287748 | 232 | 6.1446337 | 295 | 6.6560302 |
| 44 | 3.5303483 | 107 | 4.7474594 | 170 | 5.5396583 | 233 | 6.1534495 | 296 | 6.6644437 |
| 45 | 3.5568933 | 108 | 4.7622032 | 171 | 5.5504991 | 234 | 6.1622401 | 297 | 6.6719403 |
| 46 | 3.5830479 | 109 | 4.7768562 | 172 | 5.5612978 | 235 | 6.1710058 | 298 | 6.6794200 |
| 47 | 3.6088261 | 110 | 4.7914199 | 173 | 5.5720546 | 236 | 6.1797466 | 299 | 6.6868831 |
| 48 | 3.6342411 | 111 | 4.8058955 | 174 | 5.5827702 | 237 | 6.1884628 | 300 | 6.6943295 |
| 49 | 3.6593057 | 112 | 4.8202845 | 175 | 5.5934447 | 238 | 6.1971544 | 301 | 6.7017593 |
| 50 | 3.6840314 | 113 | 4.8345881 | 176 | 5.6040787 | 239 | 6.2058218 | 302 | 6.7091729 |
| 51 | 3.7084298 | 114 | 4.8488076 | 177 | 5.6146724 | 240 | 6.2144650 | 303 | 6.7165700 |
| 52 | 3.7325111 | 115 | 4.8629442 | 178 | 5.6252263 | 241 | 6.2230843 | 304 | 6.7239508 |
| 53 | 3.7562858 | 116 | 4.8769990 | 179 | 5.6357408 | 242 | 6.2316797 | 305 | 6.7313155 |
| 54 | 3.7797631 | 117 | 4.8909732 | 180 | 5.6462162 | 243 | 6.2402515 | 306 | 6.7386641 |
| 55 | 3.8029525 | 118 | 4.9048681 | 181 | 5.6566528 | 244 | 6.2487998 | 307 | 6.7459967 |
| 56 | 3.8258624 | 119 | 4.9186847 | 182 | 5.6670511 | 245 | 6.2573248 | 308 | 6.7533134 |
| 57 | 3.8485011 | 120 | 4.9324242 | 183 | 5.6774114 | 246 | 6.2658266 | 319 | 6.7606143 |
| 58 | 3.8708766 | 121 | 4.9460874 | 184 | 5.6877340 | 247 | 6.2743054 | 310 | 6.7678995 |
| 59 | 3.8929965 | 122 | 4.9596757 | 185 | 5.6980192 | 248 | 6.2827613 | 311 | 6.7751690 |
| 60 | 3.9148676 | 123 | 4.9731898 | 186 | 5.7082675 | 249 | 6.2911946 | 312 | 6.7824229 |
| 61 | 3.9364972 | 124 | 4.9866310 | 187 | 5.7184791 | 250 | 6.2996053 | 313 | 6.7896613 |
| 62 | 3.9578915 | 125 | 5.0000000 | 188 | 5.7286543 | 251 | 6.3079935 | 314 | 6.7968844 |
| 63 | 3.9790571 | 126 | 5.0132979 | 189 | 5.7387936 | 252 | 6.3163596 | 315 | 6.8040921 |

| Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 316 | 6.8112847 | 381 | 7.2495045 | 446 | 7.6403213 | 511 | 7.9947883 | 576 | 8.3203353 |
| 317 | 6.8184620 | 382 | 7.2558415 | 447 | 7.6460272 | 512 | 8.0000000 | 577 | 8.3251475 |
| 318 | 6.8256242 | 383 | 7.2621675 | 448 | 7.6517247 | 513 | 8.0052049 | 578 | 8.3299542 |
| 319 | 6.8327714 | 384 | 7.2684824 | 449 | 7.6574138 | 514 | 8.0104032 | 579 | 8.3347553 |
| 320 | 6.8399037 | 385 | 7.2747864 | 450 | 7.6630943 | 515 | 8.0155946 | 580 | 8.3395509 |
| 321 | 6.8470213 | 386 | 7.2810794 | 451 | 7.6687665 | 516 | 8.0207794 | 581 | 8.3443410 |
| 322 | 6.8541240 | 387 | 7.2873617 | 452 | 7.6744303 | 517 | 8.0259574 | 582 | 8.3491256 |
| 323 | 6.8612120 | 388 | 7.2936330 | 453 | 7.6800857 | 518 | 8.0311287 | 583 | 8.3539047 |
| 324 | 6.8682855 | 389 | 7.2998936 | 454 | 7.6857328 | 519 | 8.0362935 | 584 | 8.3586784 |
| 325 | 6.8753443 | 390 | 7.3061436 | 455 | 7.6913717 | 520 | 8.0414515 | 585 | 8.3634466 |
| 326 | 6.8823888 | 391 | 7.3123828 | 456 | 7.6970023 | 521 | 8.0466030 | 586 | 8.3682095 |
| 327 | 6.8894188 | 392 | 7.3186114 | 457 | 7.7026246 | 522 | 8.0517479 | 587 | 8.3729668 |
| 328 | 6.8964345 | 393 | 7.3248295 | 458 | 7.7082388 | 523 | 8.0568862 | 588 | 8.3777188 |
| 329 | 6.9034359 | 394 | 7.3310369 | 459 | 7.7138448 | 524 | 8.0620180 | 589 | 8.3824653 |
| 330 | 6.9104232 | 395 | 7.3372339 | 460 | 7.7194426 | 525 | 8.0671432 | 590 | 8.3872065 |
| 331 | 6.9173964 | 396 | 7.3434205 | 461 | 7.7250325 | 526 | 8.0722620 | 591 | 8.3919423 |
| 332 | 6.9243556 | 397 | 7.3495966 | 462 | 7.7306141 | 527 | 8.0773743 | 592 | 8.3966729 |
| 333 | 6.9313008 | 398 | 7.3557624 | 463 | 7.7361877 | 528 | 8.0824800 | 593 | 8.4030981 |
| 334 | 6.9382321 | 399 | 7.3619178 | 464 | 7.7417532 | 529 | 8.0875794 | 594 | 8.4061180 |
| 335 | 6.9451496 | 400 | 7.3680630 | 465 | 7.7473109 | 530 | 8.0926723 | 595 | 8.4108326 |
| 336 | 6.9520533 | 401 | 7.3741979 | 466 | 7.7528606 | 531 | 8.0977589 | 596 | 8.4155419 |
| 337 | 6.9589434 | 402 | 7.3803227 | 467 | 7.7584023 | 532 | 8.1028390 | 597 | 8.4202460 |
| 338 | 6.9658198 | 403 | 7.3864373 | 468 | 7.7639361 | 533 | 8.1079128 | 598 | 8.4249448 |
| 339 | 6.9726826 | 404 | 7.3925418 | 469 | 7.7694620 | 534 | 8.1129803 | 599 | 8.4296383 |
| 340 | 6.9795321 | 405 | 7.3986363 | 470 | 7.7749801 | 535 | 8.1180414 | 600 | 8.4343267 |
| 341 | 6.9863681 | 406 | 7.4047206 | 471 | 7.7804904 | 536 | 8.1230962 | 601 | 8.4390098 |
| 342 | 6.9931906 | 407 | 7.4107950 | 472 | 7.7859928 | 537 | 8.1281447 | 602 | 8.4436877 |
| 343 | 7.0000000 | 408 | 7.4168595 | 473 | 7.7914875 | 538 | 8.1331870 | 603 | 8.4483605 |
| 344 | 7.0067962 | 409 | 7.4229142 | 474 | 7.7969745 | 539 | 8.1382230 | 604 | 8.4530281 |
| 345 | 7.0135791 | 410 | 7.4289589 | 475 | 7.8024538 | 540 | 8.1432529 | 605 | 8.4576906 |
| 346 | 7.0203490 | 411 | 7.4349938 | 476 | 7.8079254 | 541 | 8.1482765 | 606 | 8.4623479 |
| 347 | 7.0271058 | 412 | 7.4410189 | 477 | 7.8133892 | 542 | 8.1532939 | 607 | 8.4670001 |
| 348 | 7.0338497 | 413 | 7.4470342 | 478 | 7.8188456 | 543 | 8.1583051 | 608 | 8.4716471 |
| 349 | 7.0405806 | 414 | 7.4530399 | 479 | 7.8242942 | 544 | 8.1633102 | 609 | 8.4762892 |
| 350 | 7.0472987 | 415 | 7.4590359 | 480 | 7.8297353 | 545 | 8.1683092 | 610 | 8.4809261 |
| 351 | 7.0540041 | 416 | 7.4650223 | 481 | 7.8351688 | 546 | 8.1733020 | 611 | 8.4855579 |
| 352 | 7.0606967 | 417 | 7.4709991 | 482 | 7.8405949 | 547 | 8.1782888 | 612 | 8.4901848 |
| 353 | 7.0673767 | 418 | 7.4769664 | 483 | 7.8460134 | 548 | 8.1832695 | 613 | 8.4948065 |
| 354 | 7.0740440 | 419 | 7.4829242 | 484 | 7.8514244 | 549 | 8.1882441 | 614 | 8.4994233 |
| 355 | 7.0806988 | 420 | 7.4888724 | 485 | 7.8568281 | 550 | 8.1932127 | 615 | 8.5040350 |
| 356 | 7.0873411 | 421 | 7.4948113 | 486 | 7.8622242 | 551 | 8.1981753 | 616 | 8.5086417 |
| 357 | 7.0939709 | 422 | 7.5007406 | 487 | 7.8676130 | 552 | 8.2031319 | 617 | 8.5132435 |
| 358 | 7.1005885 | 423 | 7.5066607 | 488 | 7.8729944 | 553 | 8.2080825 | 618 | 8.5178403 |
| 359 | 7.1071937 | 424 | 7.5125715 | 489 | 7.8783684 | 554 | 8.2130271 | 619 | 8.5224321 |
| 360 | 7.1137866 | 425 | 7.5184730 | 490 | 7.8837352 | 555 | 8.2179657 | 620 | 8.5270189 |
| 361 | 7.1203674 | 426 | 7.5243652 | 491 | 7.8890946 | 556 | 8.2228985 | 621 | 8.5316009 |
| 362 | 7.1269360 | 427 | 7.5302482 | 492 | 7.8944468 | 557 | 8.2278254 | 622 | 8.5361780 |
| 363 | 7.1334925 | 428 | 7.5361221 | 493 | 7.8997917 | 558 | 8.2327463 | 623 | 8.5407501 |
| 364 | 7.1400370 | 429 | 7.5419867 | 494 | 7.9051294 | 559 | 8.2376614 | 624 | 8.5453173 |
| 365 | 7.1465695 | 430 | 7.5478423 | 495 | 7.9104599 | 560 | 8.2425706 | 625 | 8.5498797 |
| 366 | 7.1530901 | 431 | 7.5536888 | 496 | 7.9157832 | 561 | 8.2474740 | 626 | 8.5544372 |
| 367 | 7.1595988 | 432 | 7.5595263 | 497 | 7.9210994 | 562 | 8.2523715 | 627 | 8.5589899 |
| 368 | 7.1660957 | 433 | 7.5653548 | 498 | 7.9264085 | 563 | 8.2572633 | 628 | 8.5635377 |
| 369 | 7.1725809 | 434 | 7.5711743 | 499 | 7.9317104 | 564 | 8.2621492 | 629 | 8.5680807 |
| 370 | 7.1790544 | 435 | 7.5769849 | 500 | 7.9370053 | 565 | 8.2670294 | 630 | 8.5726189 |
| 371 | 7.1855162 | 436 | 7.5827865 | 501 | 7.9422931 | 566 | 8.2719039 | 631 | 8.5771523 |
| 372 | 7.1919663 | 437 | 7.5885793 | 502 | 7.9475739 | 567 | 8.2767726 | 632 | 8.5816809 |
| 373 | 7.1984050 | 438 | 7.5943633 | 503 | 7.9528477 | 568 | 8.2816355 | 633 | 8.5862047 |
| 374 | 7.2048322 | 439 | 7.6001385 | 504 | 7.9581144 | 569 | 8.2864928 | 634 | 8.5907238 |
| 375 | 7.2112479 | 440 | 7.6059049 | 505 | 7.9633743 | 570 | 8.2913444 | 635 | 8.5952380 |
| 376 | 7.2176522 | 441 | 7.6116626 | 506 | 7.9686271 | 571 | 8.2961903 | 636 | 8.5997476 |
| 377 | 7.2240450 | 442 | 7.6174116 | 507 | 7.9738731 | 572 | 8.3010304 | 637 | 8.6042525 |
| 378 | 7.2304268 | 443 | 7.6231519 | 508 | 7.9791122 | 573 | 8.3058651 | 638 | 8.6087526 |
| 379 | 7.2367972 | 444 | 7.6288837 | 509 | 7.9843444 | 574 | 8.3106941 | 639 | 8.6132480 |
| 380 | 7.2431565 | 445 | 7.6346067 | 510 | 7.9895697 | 575 | 8.3155175 | 640 | 8.6177388 |

| Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 641 | 8.6222248 | 706 | 8.9043366 | 771 | 9.1696225 | 836 | 9.4203873 | 901 | 9.6584684 |
| 642 | 8.6267063 | 707 | 8.9085387 | 772 | 9.1735852 | 837 | 9.4241420 | 902 | 9.6620403 |
| 643 | 8.6311830 | 708 | 8.9127369 | 773 | 9.1775445 | 838 | 9.4278936 | 903 | 9.6656096 |
| 644 | 8.6356551 | 709 | 8.9169311 | 774 | 9.1815003 | 839 | 9.4316423 | 904 | 9.6691762 |
| 645 | 8.6401226 | 710 | 8.9211214 | 775 | 9.1854527 | 840 | 9.4353880 | 905 | 9.6727403 |
| 646 | 8.6445855 | 711 | 8.9253078 | 776 | 9.1894018 | 841 | 9.4391307 | 906 | 9.6763017 |
| 647 | 8.6490437 | 712 | 8.9294902 | 777 | 9.1933474 | 842 | 9.4428704 | 907 | 9.6798604 |
| 648 | 8.6534974 | 713 | 8.9336687 | 778 | 9.1972897 | 843 | 9.4466072 | 908 | 9.6834166 |
| 649 | 8.6579465 | 714 | 8.9378433 | 779 | 9.2012286 | 844 | 9.4503410 | 909 | 9.6869701 |
| 650 | 8.6623911 | 715 | 8.9420140 | 780 | 9.2051641 | 845 | 9.4540719 | 910 | 9.6905211 |
| 651 | 8.6668310 | 716 | 8.9461809 | 781 | 9.2090962 | 846 | 9.4577999 | 911 | 9.6940694 |
| 652 | 8.6712665 | 717 | 8.9503438 | 782 | 9.2130250 | 847 | 9.4615249 | 912 | 9.6976151 |
| 653 | 8.6756974 | 718 | 8.9545029 | 783 | 9.2169505 | 848 | 9.4652470 | 913 | 9.7011583 |
| 654 | 8.6801237 | 719 | 8.9586581 | 784 | 9.2208726 | 849 | 9.4689661 | 914 | 9.7046989 |
| 655 | 8.6845456 | 720 | 8.9628095 | 785 | 9.2247914 | 850 | 9.4726824 | 915 | 9.7082369 |
| 656 | 8.6889630 | 721 | 8.9669570 | 786 | 9.2287068 | 851 | 9.4763957 | 916 | 9.7117723 |
| 657 | 8.6933759 | 722 | 8.9711007 | 787 | 9.2326189 | 852 | 9.4801061 | 917 | 9.7153051 |
| 658 | 8.6977843 | 723 | 8.9752406 | 788 | 9.2365277 | 853 | 9.4838136 | 918 | 9.7188354 |
| 659 | 8.7021882 | 724 | 8.9793766 | 789 | 9.2404333 | 854 | 9.4875182 | 919 | 9.7223631 |
| 660 | 8.7065877 | 725 | 8.9835089 | 790 | 9.2443355 | 855 | 9.4912200 | 920 | 9.7258883 |
| 661 | 8.7109837 | 726 | 8.9876373 | 791 | 9.2482344 | 856 | 9.4949188 | 921 | 9.7294109 |
| 662 | 8.7153734 | 727 | 8.9917620 | 792 | 9.2521300 | 857 | 9.4986147 | 922 | 9.7329309 |
| 663 | 8.7197596 | 728 | 8.9958829 | 793 | 9.2560224 | 858 | 9.5023078 | 923 | 9.7364484 |
| 664 | 8.7241414 | 729 | 9.0000000 | 794 | 9.2599114 | 859 | 9.5059980 | 924 | 9.7399634 |
| 665 | 8.7285187 | 730 | 9.0041134 | 795 | 9.2637973 | 860 | 9.5096854 | 925 | 9.7434758 |
| 666 | 8.7328918 | 731 | 9.0082229 | 796 | 9.2676798 | 861 | 9.5133699 | 926 | 9.7469857 |
| 667 | 8.7372604 | 732 | 9.0123288 | 797 | 9.2715592 | 862 | 9.5170515 | 927 | 9.7504930 |
| 668 | 8.7416246 | 733 | 9.0164309 | 798 | 9.2754352 | 863 | 9.5207303 | 928 | 9.7539979 |
| 669 | 8.7459846 | 734 | 9.0205293 | 799 | 9.2793081 | 864 | 9.5244063 | 929 | 9.7575002 |
| 670 | 8.7503401 | 735 | 9.0246239 | 800 | 9.2831777 | 865 | 9.5280794 | 930 | 9.7610001 |
| 671 | 8.7546913 | 736 | 9.0287149 | 801 | 9.2870440 | 866 | 9.5317497 | 931 | 9.7644974 |
| 672 | 8.7590383 | 737 | 9.0328021 | 802 | 9.2909072 | 867 | 9.5354172 | 932 | 9.7679922 |
| 673 | 8.7633809 | 738 | 9.0368857 | 803 | 9.2947671 | 868 | 9.5390818 | 933 | 9.7714845 |
| 674 | 8.7677192 | 739 | 9.0409655 | 804 | 9.2986239 | 869 | 9.5427437 | 934 | 9.7749743 |
| 675 | 8.7720532 | 740 | 9.0450419 | 805 | 9.3024775 | 870 | 9.5464027 | 935 | 9.7784616 |
| 676 | 8.7763830 | 741 | 9.0491142 | 806 | 9.3063278 | 871 | 9.5500589 | 936 | 9.7819466 |
| 677 | 8.7807084 | 742 | 9.0531831 | 807 | 9.3101750 | 872 | 9.5537123 | 937 | 9.7854288 |
| 678 | 8.7850296 | 743 | 9.0572482 | 808 | 9.3140190 | 873 | 9.5573630 | 938 | 9.7889087 |
| 679 | 8.7893466 | 744 | 9.0613098 | 809 | 9.3178599 | 874 | 9.5610108 | 939 | 9.7923861 |
| 680 | 8.7936593 | 745 | 9.0653677 | 810 | 9.3216975 | 875 | 9.5646559 | 940 | 9.7958611 |
| 681 | 8.7979679 | 746 | 9.0694220 | 811 | 9.3255320 | 876 | 9.5682932 | 941 | 9.7993336 |
| 682 | 8.8022721 | 747 | 9.0734726 | 812 | 9.3293634 | 877 | 9.5719377 | 942 | 9.8028036 |
| 683 | 8.8065722 | 748 | 9.0775197 | 813 | 9.3331916 | 878 | 9.5755745 | 943 | 9.8062711 |
| 684 | 8.8108681 | 749 | 9.0815631 | 814 | 9.3370167 | 879 | 9.5792085 | 944 | 9.8097362 |
| 685 | 8.8151598 | 750 | 9.0856030 | 815 | 9.3408386 | 880 | 9.5828397 | 945 | 9.8131989 |
| 686 | 8.8194474 | 751 | 9.0896392 | 816 | 9.3446575 | 881 | 9.5864682 | 946 | 9.8166591 |
| 687 | 8.8237307 | 752 | 9.0936719 | 817 | 9.3484731 | 882 | 9.5900939 | 947 | 9.8201169 |
| 688 | 8.8280099 | 753 | 9.0977010 | 818 | 9.3522857 | 883 | 9.5937169 | 948 | 9.8235723 |
| 689 | 8.8322850 | 754 | 9.1017265 | 819 | 9.3560952 | 884 | 9.5973373 | 949 | 9.8270252 |
| 690 | 8.8365559 | 755 | 9.1057485 | 820 | 9.3599016 | 885 | 9.6009548 | 950 | 9.8304757 |
| 691 | 8.8408227 | 756 | 9.1097669 | 821 | 9.3637049 | 886 | 9.6045696 | 951 | 9.8339238 |
| 692 | 8.8450854 | 757 | 9.1137818 | 822 | 9.3675051 | 887 | 9.6081817 | 952 | 9.8373695 |
| 693 | 8.8493440 | 758 | 9.1177931 | 823 | 9.3713022 | 888 | 9.6117911 | 953 | 9.8408127 |
| 694 | 8.8535985 | 759 | 9.1218010 | 824 | 9.3750963 | 889 | 9.6153977 | 954 | 9.8442536 |
| 695 | 8.8578489 | 760 | 9.1258053 | 825 | 9.3788873 | 890 | 9.6190017 | 955 | 9.8476920 |
| 696 | 8.8620952 | 761 | 9.1298061 | 826 | 9.3826752 | 891 | 9.6226030 | 956 | 9.8511280 |
| 697 | 8.8663375 | 762 | 9.1338034 | 827 | 9.3864600 | 892 | 9.6262016 | 957 | 9.8545617 |
| 698 | 8.8705757 | 763 | 9.1377974 | 828 | 9.3902419 | 893 | 9.6297975 | 958 | 9.8579929 |
| 699 | 8.8748099 | 764 | 9.1417874 | 829 | 9.3940206 | 894 | 9.6333907 | 959 | 9.8614218 |
| 700 | 8.8790400 | 765 | 9.1457742 | 830 | 9.3977964 | 895 | 9.6369812 | 960 | 9.8648483 |
| 701 | 8.8832661 | 766 | 9.1497576 | 831 | 9.4015691 | 896 | 9.6405690 | 961 | 9.8682724 |
| 702 | 8.8874882 | 767 | 9.1537375 | 832 | 9.4053387 | 897 | 9.6441542 | 962 | 9.8716941 |
| 703 | 8.8917063 | 768 | 9.1577139 | 833 | 9.4091054 | 898 | 9.6477367 | 963 | 9.8751135 |
| 704 | 8.8959204 | 769 | 9.1616869 | 834 | 9.4128690 | 899 | 9.6513166 | 964 | 9.8785305 |
| 705 | 8.9001304 | 770 | 9.1656565 | 835 | 9.4166297 | 900 | 9.6548938 | 965 | 9.8819451 |

| Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. | Nos. | Cube Roots. |
|---|---|---|---|---|---|---|---|---|---|
| 966 | 9.8853574 | 993 | 9.9766120 | 1020 | 10.0662271 | 1047 | 10.1542744 | 1074 | 10.2408207 |
| 967 | 9.8887673 | 994 | 9.9799599 | 1021 | 10.0695156 | 1048 | 10.1575062 | 1075 | 10.2439981 |
| 968 | 9.8921749 | 995 | 9.9833055 | 1022 | 10.0728020 | 1049 | 10.1607359 | 1076 | 10.2471735 |
| 969 | 9.8955801 | 996 | 9.9866488 | 1023 | 10.0760863 | 1050 | 10.1639636 | 1077 | 10.2503470 |
| 970 | 9.8989830 | 997 | 9.9899900 | 1024 | 10.0793684 | 1051 | 10.1671893 | 1078 | 10.2535186 |
| 971 | 9.9023835 | 998 | 9.9933289 | 1025 | 10.0826489 | 1052 | 10.1704129 | 1079 | 10.2566881 |
| 972 | 9.9057817 | 999 | 9.9966656 | 1026 | 10.0859262 | 1053 | 10.1736344 | 1080 | 10.2598557 |
| 973 | 9.9091776 | 1000 | 10.0000000 | 1027 | 10.0892019 | 1054 | 10.1768539 | 1081 | 10.2630213 |
| 974 | 9.9125712 | 1001 | 10.0033322 | 1028 | 10.0924755 | 1055 | 10.1800714 | 1082 | 10.2661850 |
| 975 | 9.9159624 | 1002 | 10.0066622 | 1029 | 10.0957469 | 1056 | 10.1832868 | 1083 | 10.2693467 |
| 976 | 9.9193513 | 1003 | 10.0099899 | 1030 | 10.0990163 | 1057 | 10.1865002 | 1084 | 10.2725065 |
| 977 | 9.9227379 | 1004 | 10.0133155 | 1031 | 10.1022835 | 1058 | 10.1897116 | 1085 | 10.2756644 |
| 978 | 9.9261222 | 1005 | 10.0166389 | 1032 | 10.1055487 | 1059 | 10.1929209 | 1086 | 10.2788203 |
| 979 | 9.9295042 | 1006 | 10.0199601 | 1033 | 10.1088117 | 1060 | 10.1961283 | 1087 | 10.2819743 |
| 980 | 9.9328839 | 1007 | 10.0232791 | 1034 | 10.1120726 | 1061 | 10.1993336 | 1088 | 10.2851264 |
| 981 | 9.9362613 | 1008 | 10.0265958 | 1035 | 10.1153314 | 1062 | 10.2025369 | 1089 | 10.2882765 |
| 982 | 9.9396363 | 1009 | 10.0299104 | 1036 | 10.1185882 | 1063 | 10.2057382 | 1090 | 10.2914247 |
| 983 | 9.9430092 | 1010 | 10.0332228 | 1037 | 10.1218428 | 1064 | 10.2089375 | 1091 | 10.2945709 |
| 984 | 9.9463797 | 1011 | 10.0365330 | 1038 | 10.1250953 | 1065 | 10.2121347 | 1092 | 10.2977153 |
| 985 | 9.9497479 | 1012 | 10.0398410 | 1039 | 10.1283457 | 1066 | 10.2153300 | 1093 | 10.3008577 |
| 986 | 9.9531138 | 1013 | 10.0431469 | 1040 | 10.1315941 | 1067 | 10.2185233 | 1094 | 10.3039982 |
| 987 | 9.9564775 | 1014 | 10.0464506 | 1041 | 10.1348403 | 1068 | 10.2217146 | 1095 | 10.3071368 |
| 988 | 9.9598389 | 1015 | 10.0497521 | 1042 | 10.1380845 | 1069 | 10.2249039 | 1096 | 10.3102735 |
| 989 | 9.9631981 | 1016 | 10.0530514 | 1043 | 10.1413266 | 1070 | 10.2280912 | 1097 | 10.3134083 |
| 990 | 9.9665549 | 1017 | 10.0563485 | 1044 | 10.1445667 | 1071 | 10.2312766 | 1098 | 10.3165411 |
| 991 | 9.9699095 | 1018 | 10.0596435 | 1045 | 10.1478047 | 1072 | 10.2344599 | 1099 | 10.3196721 |
| 992 | 9.9732619 | 1019 | 10.0629364 | 1046 | 10.1510406 | 1073 | 10.2376413 | 1100 | 10.3228012 |

THE END.

al.